



AUGUSTA
UNIVERSITY

Nuclear Medicine Technology Program Manual

**Department of
Undergraduate Health Professions**

College of Allied Health Sciences

Academic Year 2023-2024

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NMT Program Academic Guidelines

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AU NMT Program Mission, Goals, and SLOs

MISSION

The Nuclear Medicine Technology Program strives to maintain a quality educational environment in order to accomplish the following outcomes:

- *Graduate NMT's who are knowledgeable in the areas of nuclear physics, radiation safety, radiopharmacy, nuclear medicine instrumentation, and nuclear medicine procedures.*
- *Graduate knowledgeable NMTs who are highly motivated to provide quality patient care.*
- *Graduate NMT's who will operate in a safe and efficient manner in a nuclear medicine practice setting.*
- *Graduate NMT's who will be able to communicate effectively in nuclear medicine clinical and professional settings*
- *Advance the profession of nuclear and molecular medicine by educating resourceful and adaptable individuals capable of leadership in a changing health care environment.*
- *Provide a stimulating atmosphere for students, faculty, and clinical staff.*
- *Maintain a source of professionals who participate in bringing new knowledge to the clinical nuclear medicine environment through service, research, and continuing education.*

GOALS

- *Offer educational experiences which provide knowledge and technical skills to perform and evaluate patient needs for nuclear medicine practice and procedures.*
- *Develop the capacity to participate in leadership roles in education, management, and patient care.*
- *Promote the desire for learning and the development of new knowledge to respond to changing demands of the nuclear medicine profession.*
- *Demonstrate professionalism in all areas of human interaction, thereby promoting quality patient care and cooperation with other health professionals.*

STUDENT LEARNING OBJECTIVES (SLOs)

The student assessment outcomes of the student learning objectives (SLO's) numbered below are currently used by the program to evaluate program effectiveness.

SLO #1: Nuclear Physics: Student will be able to calculate the new specific radioactivity of a sample after an elapsed time period given the initial activity, volume and half-life of the radioisotope.

SLO #2: Radiopharmacy: Student will be able to calculate the radiochemical purity of a radionuclide sample given the origin and solvent front strip count rate or radioactivity.

SLO #3: Radiation Protection: Student will be able to appropriately interpret federal and state regulations and supply the correct radiation warning labels given specified ambient room radiation exposure or exposure rate values.

SLO #4: NM Instrumentation: Student will be able to appropriately interpret NM instrumentation QC measures and reference to the operational capability of the instrument according to regulations and guidelines.

SLO #5: NM Procedures: Student will be able to appropriately prepare, acquire, process, and interpret NM images for quality and pathology within the technologists' scope of practice.

SLO #6: Patient Care: Student will be able to provide quality patient care in an ethical manner.

SLO #7: Written and Oral Communication: Students will be able to communicate effectively.

Academic Curriculum

BSRS – Nuclear Medicine Technology Curriculum Sequence

FALL Juniors		FIRST SEMESTER	
NMMT 3210	Radiation Physics, Protection and Biology	4	
NMMT 3215	Radiation Physics, Protection and Biology Lab	1	
NMMT 3100	Introduction to Radiologic Patient Care	2	
NMMT 3105	Introduction to Radiologic Patient Care Lab	1	
NMMT 3611	Principles and Practice of Nuclear Medicine I	3	
NMMT 3621	Principles and Practice of Nuclear Medicine I Lab	1	
NMMT 3641	Clinical Internship	3	
Total Hours Fall 1		15	
SPRING Juniors		SECOND SEMESTER	
NMMT 3612	Principles and Practice of Nuclear Medicine II	3	
NMMT 3622	Principles and Practice of Nuclear Medicine II Lab	1	
NMMT 3642	Clinical Internship	3	
NMMT 3400	Nuclear Medicine Physics	4	
NMMT 3605	Nuclear Medicine Physics Lab	1	
NMMT 3631	Applied Research I	1	
NMMT 4300	Professional Issues and Ethics	1	
Total Hours Spring 1		14	
SUMMER Juniors		THIRD SEMESTER	
NMMT 3600	Intro to Cardiology	3	
NMMT 4500	Radiopharmacy for Nuclear Medicine Technology	3	
NMMT 3320	Information Technology & Clinical Services Delivery	1	
NMMT 3643	Clinical Internship	5	
Total Hours Summer		12	
FALL SENIORS		FOURTH SEMESTER	
NMMT 4120	Principles and Instrumentation of CT	3	
NMMT 4620	Research Design and Statistical Methods in Radiologic Science	2	
NMMT 4400	Sectional Anatomy	2	
NMMT 4650	Advanced Practice in NM II (PET)	3	
NMMT 4651	Advanced Practice in NM II Lab	1	
NMMT 4641	Clinical Practicum	2	
Total Hours Fall 2		13	

SPRING Seniors	FIFTH SEMESTER	
NMMT 4631	Applied Research III	1
NMMT 4600	Advanced Practice in NM I (Cardiology)	2
NMMT 4610	Advanced Practice in NM I Lab	1
NMMT 4642	Clinical Practicum	2
NMMT 4160	Pathology for Radiologic Sciences	2
NMMT 4623	Clinical Correlation Seminar	3
NMMT 4140	Advanced Radiologic Patient Care	2
Total Hours Spring 2		13
Prerequisite Course Hours		60
TOTAL NMT PROGRAM HOURS		127

*Some courses are transitioning between the new curriculum and the old curriculum

Grading

Grading Scale

Letter Grade	Percentage	Grade Point Average (GPA)
A	90% - 100%	4.0
B	80% - 89%	3.0
C	70% - 79%	2.0
D	60% - 69%	1.0
F	< 60%	0.0

Students must earn a grade of “C” or higher in all courses to progress in the Nuclear Medicine Technology program at Augusta University. Students must **also** maintain a semester and/or cumulative programmatic GPA of “2.8” or greater to progress in the Nuclear Medicine Technology program at Augusta University. ***Additional requirements for graduation are delineated on page 18 of this student manual.*** Please refer to the “Progression Policy” found in the Department of UHP student manual.

Academic Ethics

“The University recognizes honesty and integrity as being necessary to its academic function.” The following regulations protect the equity and validity of the university’s grades and degrees, and help students develop standards and attitudes appropriate to academic life.

- No student will receive assistance not authorized by the instructor in preparing any assignment, essay, laboratory report or examination to be submitted as a requirement for an academic course.
- No student will knowingly give unauthorized assistance to another person in the preparation of any assignment, essay, laboratory report or examination to be submitted as a requirement for an academic course.
- No person will sell, give, lend or otherwise furnish to any unauthorized person material that can be shown to contain the questions or answers to any examination scheduled to be given at any subsequent date, in any course of study offered by the university excluding questions and answers from tests previously administered and authorized for release by the administering faculty member.
- Plagiarism is prohibited. Themes, essays, term papers, tests and other similar requirements must be the work of the student submitting it. When direct quotations are used, they must be indicated, and when the ideas of another are incorporated in the paper, they must be appropriately acknowledged.
- Fraudulent research activity is prohibited. Misrepresentation of data collection and analysis, including falsification, fabrication or omission of data is prohibited.
- Any person taking, or attempting to take, steal or otherwise procure in any unauthorized manner any material or information pertaining to the conduct of a class including tests, examinations, laboratory equipment, and roll books, etc., violates AU regulations.

Student Performance Expectations

The Nuclear Medicine Program at Augusta University is rigorous and broad in scope and content. Following are recommendations from faculty and successful students to help you stay focused and operate efficiently within the program.

The Nuclear Medicine Technology Student is expected to...

1. **Attend** all didactic classes, clinical rotations, laboratory experiences, online instructional requirements, and/or any course activities scheduled by the program faculty or course instructor. Tardiness or failure to maintain pace will not be tolerated.
2. **Submit** any course work assigned by the program faculty or course instructor at the time and date designated. Submission of original work is mandatory. Work submitted without proper citation in APA format constitutes plagiarism, and any student submitting such is subject to dismissal from the program.

3. Be prepared to **actively participate** in classroom activities through **prior study** of topic to be discussed.
4. **Be present** for individual meetings between student and Program Director or Clinical Instruction Coordinator to discuss the student's progress as arranged. **IT IS THE RESPONSIBILITY OF THE STUDENT** to notify the instructor, Program Director, or Clinical Instruction Coordinator if he/she encounters academic difficulty and needs assistance.
5. **Avoid excessive absences** during any course in the program. **WITHDRAWAL OF THE STUDENT FROM THE COURSE BY THE INSTRUCTOR MAY OCCUR WITH EXCESSIVE ABSENCES OR FAILURE TO MAINTAIN PERSCRIBED DEPARTMENTAL ATTENDENCE POLICIES.**
6. **Contact** the course instructor when absence from class is necessary. The student is responsible for missed course work due to absence.
7. **Take scheduled quizzes**, tests and exams at the time and date established by the course instructor for the entire class. **THERE WILL BE NO MAKE UP EXAMS FOR ANY REASON.** Arrangements may be made one week in advance to take the exam at a date **EARLIER** than the scheduled date if any unavoidable absence is anticipated.
8. **Adhere to** course, departmental and/or college policies or rules of conduct. Noncompliance may result in a student receiving a lowered or failing course grade or being withdrawn from a course.
9. **Complete all courses with a grade of "C" or better.** When students do not receive a "C" or better in a NMT course, it may be recommended to the departmental Promotions Committee that the student not be allowed to continue in the program.
10. **Student Vacations Outside of AU academic Calendar.** AU provides several scheduled vacation periods during the academic school year. Students are expected to be present for all tests and participate in all assignments conducted during the AU Academic Calendar. **VACATIONS DURING SCHEDULED COURSE ACTIVITIES WILL NOT BE ACOMMODATED.**
11. **Comply with these academic policies.** If the student is not in compliance of these policies, the instructor will give written notice of such. Depending on the nature of a violation and/or a student's previous record for policy compliance, a penalty may be invoked with an initial policy violation notice. Records of policy violations are maintained and forwarded to the Promotions Committee.
12. **Attend clinic as directed.** Arrive early and stay late. Much of the activity associated with clinical procedures occurs prior to 8:00 a.m. This includes preparation of radiopharmaceuticals used in daily operations and quality control of imaging systems critical to diagnostic accuracy. Although patients may be gone by 1:00 or 2:00, much of the computer processing of acquired diagnostic data and preparation for the next day's operations takes place in the late afternoon. All of these activities are fundamental to nuclear medicine education and a successful performance on the national credentialing examinations. There is **NEVER** "nothing to do" in a nuclear medicine laboratory.

13. **Go with the flow.** Both the clinical and academic phases of the program are delivered in a flexible, mercurial format by many different people with different backgrounds and personalities. Some experiences will be clear, concise and easy to follow. Others will require patience and a level of tolerance. Do not be confrontational; do not argue with any clinical staff member or program faculty. This is detrimental to your progression and possibly your career. Word gets out quickly if students do not interact appropriately or professionally. Clinical personnel will be your references for your first job. Don't make enemies of clinical staff or fellow students. And remember that even the most uncomfortable situations offer an opportunity for learning.
14. **Use your time wisely.** There is much to do. Do it all. Watch your due dates. There are many. Failure to complete all assignments in an effective and timely manner will affect your success in the NMT Program, your success of the national credentialing examination, and your competitiveness in the employment market.
15. **Learn to use the online resources immediately.** Much of the instructional content is delivered within the Desire2Learn environment. Learn the operation of these tools, and the value of their use quickly. Your academic performance will be directly related to your comfort level within the online environment. This instructional medium is mandatory; it is not optional. **Ask for help quickly.** The rigor of the NMT program can be daunting at times. The volume and difficulty level generally gets to all students at some point. Program faculty are generally empathetic and will cut you some slack as long as such requests are kept to a minimum. Email faculty immediately for clarification on any point.

General Learning Objectives for Nuclear Medicine Imaging

Upon completion of the Nuclear Medicine Technology Program the student will be able to achieve the following learning outcomes for each identified clinical procedures subject area:

- Identify and describe the elements of bio-distribution and radiopharmaceutical characteristics that allow for evaluation of specific pathological processes within the human body.
- Identify and describe the function of anatomy and physiology of specific organs or organ systems on a diagram or nuclear medicine image.
- Name and list the normal laboratory range values for ancillary body chemistry test complementing specific nuclear medicine procedures.
- List major signs and symptoms, indications, NMT procedures, and radiopharmaceuticals appropriate for the evaluation of specific disease processes.
- Identify the appropriate equipment, instrumentation parameter, and patient positioning specifics and explain how and why these choices maximize the creation of a diagnostic image or accurate test results.

- Calculate the volume, concentration, decay and considerations for specific radiopharmaceutical kit compounding.
- Given two radiopharmaceuticals available for the evaluation of the same organ or organ system, compare and contrast the differences in indications or outcomes of each.
- Shown a Nuclear medicine image, identify major anatomical landmarks that help to identify the radiopharmaceutical or imaging method used in acquiring the image.
- Discuss any modifications, pitfalls or technologist-controlled aspects of Radiopharmacy techniques, administration, acquisition or processing of specific nuclear medicine procedures that will enhance or degrade the diagnostic quality of the given procedure.
- List and state the purpose and use of any ancillary equipment that is used in a given Nuclear medicine imaging or laboratory procedure and demonstrate its operation.
- State the appropriate radiation protection signage or documentation required by the state and national regulatory agencies in transporting, receiving, storing and administering specific radioactive materials used for medical imaging.
- Perform radiation handling in a safe manner according to policies and procedures as established by each institution, state, and regulatory agency
- Provide competent patient care in all interactions with patients according to standards of practice.
- Perform professionally according to accepted standards of practice in all areas of ethics, cultural sensitivity, social interaction and civil responsibility.

Professionalism

NMT students will be assessed on professionalism in all aspects of program participation. Students are expected to observe accepted standards of decorum in both the didactic and clinical phases of the educational experience. Professional behavior will be a graded aspect of all courses. Behaviors for assessment include but are not limited to those listed below. It cannot be emphasized enough that academic performance and technical competence are not enough to qualify a graduate for the practice setting, and that those students who do not adhere to consistent standards of work expectations and human interaction may be subject to administrative withdrawal from the NMT program.

STUDENT PROFESSIONAL BEHAVIOR EXPECTATIONS

You are expected to exhibit the following:

I. Attitude:

Compassion/Empathy:

- demonstrate calm, compassionate, helpful demeanor toward those in need
- respond appropriately to the emotional response of those with which you interact
- take initiative to help others with spoken and unspoken needs, problems, issues
- demonstrate empathy in professional interactions with others
- be supportive and reassuring to others

Acceptance of Constructive Criticism:

- receive constructive criticism with a positive attitude and use feedback to improve your behavior/performance
- provide constructive criticism in a positive manner so it will be received by others in a productive way

Respect:

- treat others with dignity and respect
- refrain from generating or spreading gossip; profanity; demeaning, foul, threatening, abusive or other negative communication
- behave in a manner that brings credit to your school, discipline, and employer
- avoid criticism of people in front of others
- treat equipment and other resources with due care

Conscientiousness:

- be meticulous and careful in conducting professional tasks
- consistently strive for excellence in professional activities

Sincerity/Genuineness:

- demonstrate authentic expression/communication by appropriate use of voice tone, volume and inflection
- avoid use of patronizing terms (sweetie, honey, etc.) and impersonal communication
- recognize a job well done by others

II. Integrity:**Dependability/Reliability:**

- be dependable in all your professional dealings
- honor your commitments

Accountability:

- be accountable for your actions and their consequences

Honesty:

- be consistently truthful, forthright, and credible
- be trustworthy by those with whom you interact
- be trusted with property of others
- refrain from deceptive practices
- avoid being placed in a compromising situation, either directly or by association
- report actions deemed dishonest, illegal or unethical to the proper authorities for action

Exercise of Sound Judgment:

- make sound decisions based upon established rules and regulations, fact, and logic

Workload Sharing/Teamwork:

- show proper respect for group members
- work cooperatively with others
- actively participate in group work from beginning to completion
- contribute your share when working as a group (in number and complexity of tasks)
- if your assignment is complete, seek out opportunities to contribute above and beyond minimum requirements
- value the knowledge, expertise and suggestions of group members
- communicate with other group members to resolve problems
- participate in group discussion without attempt to dominate
- put the success of the group above self-interests
- be willing to mentor those in need of encouragement and direction

Responsibility:

- be competent before performing a task independently
- without request, take on and follow through with tasks
- demonstrate self-reliance in carrying out professional tasks
- provide realistic time estimates for completion of specific tasks
- insure tasks within your responsibility are completed fully and in a timely manner
- act with the safety of yourself and others in mind
- look out for the well-being of others

Demonstration of Professional Code of Ethics:

- be intimately familiar with your discipline's Code of Ethics and potential consequences of noncompliance
- demonstrate a high standard in personal and professional behavior
- report violations of the Professional Code of Ethics to the proper authorities for action

Quality of Work:

- set a high standard for quality of professional expertise and outcomes
- excel in productive use of time and resources
- choose to perform tasks according to proper protocols rather than taking "shortcuts"
- remain abreast of new information in your professional discipline and health care in general

Admission of Mistakes:

- acknowledge mistakes/ errors, apologize and mend appropriately

III. Communication:**Confidentiality:**

- protect and preserve personal and confidential information of others to which you may have access

- observe appropriate conversational etiquette in various professional settings (elevators, cafeteria, work areas, offices, classrooms, hallways, etc.)

Level/Quality of Communication:

- create a comfortable communicative atmosphere
- communicate with volume, tone, terminology, and nonverbal cues appropriate to the situation presented
- convey written messages appropriately
- provide appropriate information to others that will assist them with tasks/procedures at hand
- listen actively and confirm accuracy of interpretation of communication
- adjust communication strategies to fit various situations
- encourage questions to clarify information
- use humor appropriately in communications

Communication Process:

- follow established rules and regulations regarding hierarchy of communication
- communicate in a timely manner

Perception of Others' Needs:

- be attentive to the needs of others

Relevancy of Communication:

- refrain from personal activities while in professional environments
- demonstrate proper discernment re: content of professional communications (ex. Interactions are relevant, appropriate and respectful)

Politeness:

- respond to others in a positive manner by smiling and speaking with a genuine tone
- display appropriate manners in interacting with others (ex. Use appropriate surnames and titles in formal/profession interaction; identify yourself and your role when communicating with others; allow patients, elders, etc. priority in entering and exiting buildings and elevators)
- avoid interrupting the speaker

Emotional Control:

- demonstrate appropriate physical, verbal and emotional restraint in professional interactions with others

Observance:

- anticipate needs of others based on physical, verbal and nonverbal cues

Cultural Sensitivity:

- demonstrate understanding of cultural, religious and spiritual differences of others

- exhibit appropriate sensitivity in interactions with those of different cultures, religions and spiritualities'

Conflict Resolution/Diplomacy:

- use tact when presented with (potentially) violent situations
- follow appropriate protocol in resolution of conflict
- exhibit proper restraint in communication during conflict resolution

IV. Motivation:

Preparation for Assignments:

- organize information appropriately for use/study
- bring prior assigned materials with you to designated activities
- put forth genuine effort to prepare for and complete assignments
- use outside resources in addition to required texts to research relevant information
- demonstrate both quantity and quality of effort in completing assignments
- fully complete assignments by their deadlines

Attendance:

- be early or on time for all activities (also applies to activities involving optional attendance)
- if unavoidably late or absent, contact appropriate party ahead of time, or as soon as reasonably possible in an emergency, to inform them of the change in arrival time in the event of absence, take responsibility for getting information missed and for requesting rescheduling of activities, in appropriate or allowed

V. Independence/ Leadership:

Respect for Authority:

- understand rules and regulations of unit of which you are a part
- comply with established rules and regulations in task completion
- champion and communicate the mission and vision of your school, employer and profession
- use grievance mechanisms appropriately

Adaptability:

- be flexible in dealing with issues that are not absolute in nature
- appropriately modify and reorganize rules and regulations or protocols as needed
- adapt to different instructors, modes of instruction and management styles
- accept changes in assignments and schedules without flustering

Understanding of Limitation:

- do **NOT** attempt any task beyond your capabilities without instructor/ supervisor's consent and instruction or supervision

VI. Self-Worth/ Assessment/ Altruism:

Appearance:

- meet or exceed standards for professional dress

Personal Hygiene:

- meet or exceed standards for professional grooming

Recognition of Strengths/ Weaknesses:

- use feedback from other professionals, peers and self-reflection to identify strengths and weaknesses
- proactively look for ways to improve your behavior and performance
- value the positive contributions you make to your school, discipline and employer

Desire to Help Others:

- appreciate and recognize others for their contributions
- be an advocate for those you serve
- be involved in activities that improve your community and/ or other groups you desire to help.

Requirements for Graduation

The credentialing bodies of the Nuclear Medicine Certification Board and the American Registry of Radiologic Technologists dictate that **no student may sit for either certifying examination until verification of successful completion of the graduating Nuclear Medicine Technology program.** Successful completion must be documented by the NMT Program Director. The Augusta University Program Director will provide examination applications two months prior to program completion to students who are projected to complete all the following program requirements:

- Completion of clinical components and clinical hours.
- Successful completion of all program didactic and clinical coursework with a minimum grade of “C” and a minimum semester and/or cumulative GPA of “2.8”
- Passing of program exit examination(s) with a minimum grade of **75 percent.**
 - ★ *Failure to do so will result in an incomplete for that course until the criteria is met thus delaying sitting for certification exam. If the criteria is not met by the designated time frame, the graduation date will change.*
- For Baccalaureate students, completion of all University System of Georgia Regents Exams.

HONORS: The Augusta University awards undergraduate degrees with honors to candidates who meet specific standards of academic excellence as measured by the grade point average. A student must have completed a minimum of 60 semester hours in residence for a baccalaureate degree to be awarded with honors. For students completing all course work at Augusta University, the Regents GPA is used for the calculation of honors. For students transferring work taken at Augusta coursework to Augusta University, a grade point average including all transfer work and all University will be used for calculation of honors. Both this calculated GPA and the Regents GPA must meet the standards below. The honor will be determined by the lower of the two GPAs.

Summa cum laude	3.90
Magna cum laude	3.70
Cum laude	3.50

SCHOLARSHIPS

The Molini Scholarship: Tony Molini was a graduate of the NMT Program under the direction of Dr. Wanda M. Hibbard (Mundy) in 1980. Since his graduation, he was a fixture in the Nuclear Medicine Technologist community in the CSRA, displaying an unyielding attention for detail and professional excellence in his role as a NMT in a number of clinics in the Augusta area. He died in 2004 of malignant Melanoma. The Antonio Molini Foundation was established in his memory.

The Tony Molini Award is presented to a senior enrolled in the Augusta University Nuclear Medicine Technology baccalaureate program on the Augusta campus. This senior emulates superior qualities of clinical and professional practice in Nuclear Medicine Technology in the spirit of dedication to the profession and patient care demonstrated by Mr. Antonio Molini.

Paul Cole Scholarship: The Paul Cole Scholarship is named in memory of Paul Cole, CNMT, who served as President of the SNMMI Technologist Section (SNMMI-TS) in 1986 and who was known as a champion of education for technologists.

Twenty-five \$1,000 scholarships are available through a grant from the Education and Research Foundation for SNMMI.

Navigating DESIRE 2 LEARN Courses

Your success in the NMT program will be directly related to your ability to optimize use of the tools and information found in your online Desire2Learn learning environment. All courses in the program use this component in a robust manner. Anything you need to know will be located there. **DO NOT WAIT FOR CLASS LECTURE TIME TO ANSWER YOUR QUESTIONS.** One of the hallmarks of AU NMT graduates is their ability to find targeted and relevant information quickly. This ability starts with learning the ins and outs of online informational resources. The time to start is **NOW!**

You will have a comprehensive demonstration of Desire2Learn (**D2L**) and its various components during fall orientation. Additionally, features of the online application as well as how it is used with specific NMT courses will be demoed throughout the first weeks of school. You should be able to navigate and use Desire2Learn with mastery within the first month.

It will be important to check your Desire2Learn courses for messages on a **DAILY** basis. Most course information will be posted here. It will also be important to check your students **Outlook email** account on a **DAILY** basis, as all D2L email goes there, and many faculty use this tool as their primary mode communication. Be sure to ask each instructor how he/she distributes

information. If you have technical difficulties with Desire2Learn, you can contact the help desk at any time. Also be sure to contact your course instructor immediately through e-mail if you have problems meeting a deadline because of technical issues. It will be important to assure that your computer is configured to run the online tools properly.

In addition to Desire2Learn, all program lectures are recorded via the Echo 360 online capture system. This tool will allow you to rewind and review classroom lectures as many times as you wish. Once you've used this, you won't want to be without it. If you're at the Atlanta campus, Echo 360 lectures will be your lifeline to classroom information in the program. Make sure you have it up and running quickly.

For any technical issue with Echo 360 or Desire2Learn, you can contact AU IT support at **706-721-4000**.

NMT Program Clinical Guidelines

Clinical

Clinical Guidelines

NMT student technologists will participate in the clinical areas of major hospital affiliates by assisting with and performing real time Nuclear Medicine diagnostic procedures. **All** NMT students must obtain an **ANNUAL** Criminal Background Check and Drug Screen to participate in any clinical rotation. These reports have an expiration date; if the report expires while you are enrolled in the program, you will be notified of how and when to renew and will be responsible for the associated fees. Students will observe and perform procedures under the supervision of Clinical Instructors designated for each rotation site. Major Clinical Site rotations are generally 7-15 weeks in length but may change at the discretion of the program faculty. Short-term Clinical site rotations will typically be of 2-4 weeks in duration and will involve special mentorship or focused application.

Students must have a final grade of a “C” or better to receive program credit for the course and maintain a minimum semester and cumulative GPA of 2.80 to graduate. Any student caught cheating or forging times or exams will receive a failing grade in this course and will be evaluated for dismissal from the program.

Attendance policy is outlined in the Department of Undergraduate Health Professions student orientation manual. The Nuclear Medicine Program specific attendance policy is further defined under the **Clinical Hours** subsection of this document. Students are cautioned against excessive absences as these may make the student ineligible for completing the course, and subsequently ineligible to take the national registry.

As a requirement for graduation from Augusta Universities NMT program, the student must have a minimum of **1300** cumulative clinical hours. Failure to complete this minimum number of hours will result in a grade of “Incomplete” (IC), and failure to graduate on schedule. After receiving an incomplete, the highest grade a student can receive for a clinical course is 80%. If the cumulative clinical hours are not met by Fall Semester following graduation, the Incomplete will be changed to an “F” and you will be unable to sit for the credentialing exam.

AU Guidelines for Nuclear Medicine Clinical Affiliates

I. The clinical instructors will provide effective supervision

- A supervised environment that enhances student learning
- A well balanced variety of NM procedures, when appropriate, in the clinical environment
- Clear communication as to the students’ assigned areas

II. The clinical instructors will provide effective communication skills

- Will define performance expectations to the students

- Will collaborate to develop mutually agreed upon goals and objectives for the clinical education experience
- Will provide feedback to the student
- Will demonstrate skills in active listening
- Will provide clear and concise communication
- Is responsible for facilitating communication
 - Encourages dialogue
 - Provides a proper environment for dialogue to occur
 - Initiates communication that may be difficult or confrontational in a diplomatic manner
 - Is open and encourages feedback from the students, clinical educators and other colleagues

III. The clinical instructors will demonstrate effective behavior, conduct and skill in interpersonal relationships

- Models behaviors and conduct, and instructional and supervisory skills that are expected of the Nuclear Medicine professional and demonstrates an awareness of the impact of this role modeling on students.
- Promotes the student as a professional to others
- Demonstrates cultural competence and respect for and sensitivity to individual diversity and cultural differences
- Is willing to share his or her strengths and weaknesses with students
- Assesses and responds to students concerns with empathy, support or interpretation as appropriate.

IV. The clinical instructors will demonstrate effective instructional skills

- Will provide clinical learning opportunities for students in the affiliate clinical setting
- Will educate students in quality control procedures on nuclear medicine equipment
- Will give students appropriate constructive feedback in order for them to learn and develop clinical skills

V. The clinical instructors will provide effective performance evaluation of the students

- Will participate in assessment of student's clinical skills
- Will familiarize him/herself with the student's evaluation criteria prior to the clinical rotation

- Recognizes and documents student's progress, identifies areas of entry-level competence, areas of distinction, and specific areas of performance that are unsafe, ineffective or deficient in quality
- Demonstrates awareness of the relationship between the academic program and the clinical education site concerning student's performance evaluations, grading, remedial activities, and due process in the case of student failure
- Demonstrates a constructive approach to student performance evaluation that is educational, objective and reflective and engages students in self-assessment (e.g. problem identification, processing and solving) as part of the performance evaluation

VI. The clinical instructors demonstrate clinical competence and legal and ethical behavior in the field of Nuclear Medicine

- Represents the Nuclear Medicine profession positively by assuming responsibility for career and self-development and demonstrates this responsibility to the student
 - Activities for development may include, but are not limited to: continuing education courses, journal clubs, case conference, post-professional/entry-level education, area consortia programs and active involvement in professional associations including **ANTS**, **GSNMT** or the **SNMMI**
- Will assure patient safety and ensure the patient is aware that students are involved in providing care/ imaging services
- Will provide nuclear medicine services that are consistent with the scope of practice, the institutional guidelines and the state and federal guidelines, including, but not limited to equal opportunity and diversity policies, **HIPAA**, Medicare regulations, **ADA**, licensing and radiation regulations
- Will keep up-to-date on current nuclear medicine procedures and professional developments through continuing education
- Will keep all certifications and/or licenses pertinent to the discipline current and valid
- Will demonstrate legal and ethical behavior that meets or exceeds the expectations of members of the profession and that abide by the **SNMMITS** Code of Ethics and Scope of Practice and **ARRT** Standard of Ethics
- Will document satisfactory participation in extra mural quality assurance programs, such as the Joint Commission or **ACR**

Affiliate Educational Supervisor (AES):

- The Affiliate Educational Supervisor will have at least **two** years of clinical experience to meet the requirements of the **JRCNMT**
- The Affiliate Educational Supervisor will be the representative on the AU NMT student education program advisory committee as defined by the **JRCNMT**
 - Will attend annual affiliate meeting (or a representative)

- Will provide feedback on program policies, procedures and curriculum
- Will coordinate the clinical activities at the affiliate site and ensure the program objectives and goals are being met; will keep open communication with the program and discuss any concerns or provide feedback about the rotation, student or program

Objectives of the Nuclear Medicine Clinical Program

Upon completion of the Nuclear Medicine Program (clinic) students will:

- Develop and demonstrate professionalism in respect to outcomes based on Nuclear Medicine and its role in the medical management of patients as assessed and documented by Clinical Instructors and Staff Technologists
- Demonstrate the ability to safely and effectively assist with basic patient care and other duties which contribute to the smooth running of each individual clinical site
- Demonstrate self-direction and discipline in regard to clinical commitment and work ethic as assessed and documented by Clinical Instructors and Staff Technologists

Clinical Attire (Dress Code)

Students will be evaluated on appearance and professional manner. The Nuclear Medicine program (NMT) dress code policy is outlined below. Students must wear the following at all times during clinical affiliation.

- White laboratory coat
- AU identification badge
- Radiation monitors (ring and whole body)
- Closed toed shoes with socks or stocking (no boots)
- Scrubs: Cherokee Workwear or comparable brand in “Navy” blue are the approved scrubs for the students enrolled in the NMT program at August University. Please note that all hospitals impose strict consequences on employees and authorized practitioners who are found in possession of hospital owned surgical scrubs or other hospital property outside the premises of each individual hospital campus. Any NMT student technologist seen wearing or in possession of hospital property outside hospital grounds is subject to immediate dismissal from the NMT Program.

The following are not acceptable during clinical rotations:

- ❖ Shoes with unwieldy decorations, extremely long shoe laces or extreme logos
- ❖ Cologne or perfume should not be worn because these may trigger uncomfortable symptoms in sick patients.
- ❖ **No** artificial nails because these provide a fertile culture for a variety of antibiotic resistant bacteria.

Personal appearance

Hair

- Should not fall forward over face and length should be secured up off shoulders
- Should be clean and appropriately groomed
- Facial hair is not preferred, but when worn, should be neatly groomed and trimmed.

Cosmetics

- Cosmetics are not to be applied in the clinical setting. Moderate cosmetics may be adorned prior to entering the clinical setting.
- **No** artificial nails because these provide a fertile culture for a variety of antibiotic resistant bacteria.

Jewelry

- No jewelry other than a watch and wedding band should be worn.
- Earring studs may be worn if ears are pierced but should not hang below the earlobe.
- No body piercing should be worn in the clinical setting. Recent body piercing that has not yet healed must be covered with Band-Aids. Body piercing is a personal choice but discouraged by the NMT faculty as the areas chosen for decorative display typically have reduced blood flow and consequently demonstrates a slow healing process. Within a clinical setting where practitioners are exposed to infectious pathogens on a regular basis, small body wounds provide a fertile culture for a variety of antibiotic resistant bacteria.

Dress Code Violations

The following actions will be taken per semester depending on the number of infractions:

- **First Offense:** Verbal communication between clinical evaluators and student with note citing the specific violation. No grade reduction but will be dismissed from site until dress complies with standards.
- **Second Offense:** Verbal or written warning through the clinical evaluator to student and clinical coordinator. A 5% grade reduction and dismissal from site until dress complies with standards.
- **Third Offense:** Verbal or written communication between evaluator, student and clinical coordinator. Dismissal from clinical affiliation until dress complies with standards and a grade reduction of 10%.

Radiation Monitoring

Radiation monitoring devices (ring and badge) are distributed to students monthly, as per the Augusta University Radiation Safety Policy:

<https://www.augusta.edu/services/ehs/radsafe/documents/aurism61623.pdf>

Badges and rings are to be returned to the department by the 5th of each month. When returning the devices, the student should:

- Look up their name and review their monthly exposures in the radiation monitoring report located on the desk by the badges
- Sign and date the monitoring report beside their name.

A student who fails to return their devices by the appointed date will have to personally deliver their dosimeters to the radiation safety office, and will not be allowed to return to clinic until this has been accomplished

Guidelines for other violations:

- Lack of radiation monitor: Dismissal from clinical site until monitor is in place
- Lack of Laboratory coat: Dismissal from clinical site until worn.
- Improper or unsafe attire: Dismissal from clinical site until properly attired

Clinical Hours

Practicum provides opportunity for the development of clinical skills, and application of didactic information in a work situation. While a student, practicum hours are as important as attendance at a future job. Students are expected to conform to the specified clinical schedules.

Tardiness

Tardiness is defined as reporting to the workstation from one minute to 2 hours beyond the scheduled start time. Lateness of more than 2 hours will be defined as an unscheduled absence. Tardiness also includes failure to turn in radiation monitoring devices by the 5th day of the next month, and failure to turn in radiation monitoring devices by 5 days after the end of the semester. A consistent system will be used to count all tardiness regardless of the reason(s), but NMT faculty has the discretion to exclude certain occurrences that are beyond the student's control.

Tardiness Violations

Tardiness at clinic and/or turning in radiation monitoring devices - The following actions will be taken per semester depending on the number of infractions:

- **First Offense:** Verbal or written warning.
- **Second Offence:** Verbal or written warning and a reduction in clinical grade by 5% points.

- **Third Offense:** Indicates a chronic problem. Student must set up a conference with the clinical coordinator. Equivalent to one unexcused absence resulting in an additional 10% reduction in the clinical grade.

Absences

Students should keep in mind that to obtain the clinical requirement of 1300 hours to graduate from the program, there is no extra time built into the clinical rotations. However, students will be allowed **one (1)** personal days per semester. These personal days will need to be approved just like any time away from clinic, but the hours will not have to be made up. Any additional days missed **must** be made up by the student before the end of the semester. Students who will not be able to participate on a specific clinical day need to follow the guidelines below:

- **Scheduled and Approved Absences:** Scheduled or approved absences including Family Medical Leave Act will not be considered for disciplinary purposes. Scheduled absences are those scheduled in advance. Other approved absences fall within the areas listed below. They include:
 - Absences, for any reason, which have been scheduled and approved in advance by the clinical coordinator and clinical site such as leaves of absence (Military, educational, etc.). **The student is responsible for notifying the clinical coordinator and assigned clinical site before being absent.**
 - Absence caused by a work-related injury or illness.
 - Jury duty
 - Bereavement leaves due to the death of an immediate family member. Normally, at least three days are allowed for such absences. Exceptions are evaluated on an individual basis. Immediate family includes Mother, Father, Sister, Brother, Spouse, Child, Mother-in-Law, Farther-in-Law, Brother-in-Law, Sister-in-Law, Grandparents, Grandchild and Surrogate parent.
 - Absences that qualify under Family Medical Leave Act (FMLA), and which appropriate medical or other legal documentation has been received. A Serious Health Condition (defined by FMLA) that makes the student unable to perform a clinical rotation. A Serious Health Condition (defined by FMLA) affecting the student's spouse, child, or parent, and for which the student is needed to provide care.
 - Time off needed for the birth of a child, or the placement of a child with the student for adoption or foster care.
 - **Family emergency:** Notify the clinic site before the beginning of the shift **and** notify your clinical coordinator via email prior to 8:30am the day of the absence.
 - **Illness:** Notify the clinic site before the beginning of the shift **and** notify your clinical coordinator via email prior to 8:30am the day of the absence.
- **Unscheduled Absences:** Unscheduled absences occur when no notification is given to the clinical site or clinical coordinator **2** hours past scheduled rotation time, and for

which the student has not received advanced approval in accordance with the departmental guidelines or are not otherwise specified above, including:

- Failure to attend any portion of an assigned shift (including those counted as tardy). This includes leaving clinic early.
- Failure to follow call-in procedure will result in an unscheduled absence due to illness not protected by FMLA. For multiple consecutive days of illness, only the first scheduled shift will be counted as an unscheduled absence provided the clinical coordinator and clinic supervisor is notified of the need for multiple days off. Illnesses 2 days or greater in length, student must provide an excuse from doctor or Student Health to clinical coordinator.

Progressive Discipline and Corrective Action for Attendance Violations

Students are responsible for notifying and arranging absences with the clinical coordinator and assigned clinical site before being absent. The following actions will be taken for unscheduled absences depending on the number of infractions:

- **First Offense:** Students will be given a warning and reminded of the policy.
- **Second Offense:** Students will be barred from clinic until a conference is scheduled with the clinical coordinator. During the conference student will present reasons for not following the absence policy. Coordinator and student will discuss when the student will make up the missed practicum hours. The student's clinical grade will be lowered by 10 percentage points.
- **Third Offense:** Lowers the final grade by an additional 20 percentage points and student will be referred to the Program Director for subsequent disciplinary action to include possible suspension or removal from the program.

AU Nuclear Medicine Program Inclement Weather Policy

INCLEMENT WEATHER POLICY: The intent of this policy is to ensure the safety of each AU NMT student during severe/hazardous weather to include both on-campus and distance students.

All campus closures will be determined and initiated by the University President. Upon receipt of the notice from the President's office, the Critical Preparedness director or their designee, will notify all employees and students of the decision to close the University. The notification will be done using the Augusta University Alert mass notification system. The notice will inform students and staff of critical campus developments, provide pertinent information, and give instructions on appropriate response measures. The system will also be used to disseminate information regarding campus reopening's.

Upon closing of the University, both on-campus and distance students will be dismissed from classes and/or clinic. The decision to make-up missed clinical hours will be at the discretion of

the Clinical Instructor and any missed class assignments that need to be made-up will be at the discretion of that courses' instructor.

If the event the University is not closed, students are expected to attend classes and or clinic as scheduled. However, students and individual clinic sites must exercise good judgment and caution based on the weather conditions in their immediate area. If there are concerns regarding safe travel, each student may choose to miss class or clinic based on their individual situation. Absences or tardiness must be communicated to the clinical instructor and clinic site in question or appropriate course instructor. Under this circumstance, students will be required to make-up missed clinical hours.

Unregistered Students Working in an Unsupervised Setting

- A student may not receive compensation for performance of Nuclear Medicine duties during official AU NMT clinical and academic times, Monday – Friday 7:00a.m. until 4:30 p.m.
- No student may report clinical hours that are concurrent with compensated hours.
- Students may receive clinical hour credit for time spent in assisting a staff technologist in an on call procedure.
- No student is to be used within a clinical setting in a staff position or to substitute for short staffing requirements during official AU NMT clinical and academic times.
- AU is not liable or responsible for any mishap or injury incurred by a student or patient while unsupervised by a clinical instructor or certified technologist.
- Students and employers are **STRONGLY CAUTIONED** from entering into a paid unsupervised staffing arrangement until Fall Semester of the Senior year when students have received all the academic requirements as stated in **rule 391-3-17-.05 (25)** of the Georgia Department of Natural Resource's Rules and Regulations of the use of Radionuclides in the Healing Arts.
- Students do not become registry eligible until program completion. Students must indicate to employers that they are not registry eligible. Failure to notify employer of misrepresenting registry status is a violation of ethics and can have serious consequences.

Professional Ethics

Those employee characteristics most sought after by employers (i.e. good work habits) will depend on the extent to which students develop the professional behavior necessary in the health care setting. Professional ethics in health care are based on considering the welfare of the patient, co-workers and treating the patient with compassion and caring while being clinically proficient. Therefore, work habits are an integral part of Nuclear Medicine Technology instructional program at Augusta University. The ethics and rules that govern the daily behavior of professionals in the radiologic sciences are set by the Nuclear Medicine Technology Certification Board (NMTCB) and the American Registry of Radiologic Technologies (ARRT) and are reproduced below respectively in an effort to clarify how to become a health care professional.

Code of Ethics for the Nuclear Medicine Technologist:

NMTCB Code of Ethics

Nuclear Medicine Technologists, as members of the health care profession, must strive as individuals and as a group to maintain the highest of ethical standards.

The Principles (SNMMI-TS Code of Ethics) listed below are not laws, but standards of conduct to be used as ethical guidelines by nuclear medicine technologists. These Principles were adopted by the Technologist Section of the Society of Nuclear Medicine and Molecular Imaging at the 2012 annual Meeting. They are standards of conduct to be used as a quick guide by nuclear medicine technologists.

Principle 1: The Nuclear Medicine Technologist will provide services with compassion and respect for the dignity of the individual and with the intent to provide the highest quality of patient care.

Principle 2: The Nuclear Medicine Technologist will provide care without discrimination regarding the nature of the illness or disease, gender, race, religion, sexual preference or socioeconomic status of the patient.

Principle 3: The Nuclear Medicine Technologist will maintain strict patient confidentiality in accordance with state and federal regulation.

Principle 4: The Nuclear Medicine Technologist will comply with the laws, regulations and policies governing the practice of nuclear medicine.

Principle 5: The Nuclear Medicine Technologist will continually strive to improve their knowledge and technical skills.

Principle 6: The Nuclear Medicine Technologist will not engage in fraud, deception or criminal activities.

Principle 7: The Nuclear Medicine Technologist will be an advocate for the profession

ARRT Standard of Ethics

1. The radiologic technologist conducts himself/herself in a professional manner, responds to patient needs and support colleagues and associates in providing quality patient care.
2. The radiologic technologist acts to advance the principle objective of the profession to provide services to humanity with full respect for the dignity of mankind.
3. The radiologic technologist delivers patient care and service unrestricted by concerns of personal attributes or the nature of the disease or illness, and without discrimination, regardless of sex, race, creed, religion or socioeconomic status.

4. The radiologic technologist practices technology founded upon theoretical knowledge and concepts, utilizes equipment and accessories consistent with the purpose for which it was designed and employs procedures and techniques appropriately.
5. The radiologic technologist assesses situations, exercises care, discretion and judgment, assumes responsibility for professional decisions, and acts in the best interest of the patient.
6. The radiologic technologist acts as an agent through observation and communication to obtain pertinent information from the physician to aid in diagnosis and treatment management of the patient, and recognizes that interpretation and diagnosis are outside the scope of practice for the profession.
7. The radiologic technologist uses the equipment and accessories, employs techniques and procedures, performs services in accordance with accepted standards of practice, and demonstrates expertise in limiting the radiation exposure to the patient, self and other members of the health care team.
8. The radiologic technologist practices ethical conduct appropriate to the profession, and protects the patient's right to quality radiologic technology care.
9. The radiologic technologist respects confidences entrusted in the course of professional practice, protects the patient's right to privacy and reveals confidential information only as required by law or to protect the welfare of the individual or the community.
10. The radiologic technologist continually strives to improve knowledge and skills by participating in educational and professional activities, sharing knowledge with colleagues and investigating new, and innovative aspects of the professional practice (ARRT 2012).

References:

NMTCB, 2012: <http://www.nmtcb.org/policies/ethics.php>

ARRT, 2021: <https://www.rrt.org/docs/default-source/Governing-Documents/arrt-standards-of-ethics.pdf?sfvrsn=10>

Violations in Code of Ethics that constitute a Critical Incident

It is understood that students in the Nuclear Medicine Technology program will conduct themselves in a professional and responsible manner. However, if a student becomes involved in a specific incident in any area that is so critical that if it were exhibited in the work place, it could jeopardize patient health or safety, or a student demonstrates a flagrant irresponsibility in job commitment that would result in termination of employment, he or she may be subject to consequential action taken by the Program Director upon documentation by the Clinical instructor and the lead Technologist.

Areas of performance that may come under severe negative scrutiny are:

- Abandonment of Rotation Attendance
- Insubordination or insolence to Clinical Professional
- Dishonesty in reporting of hours or procedures
- Failure to comply with Program attendance rules and notification in case of absence
- Blatantly inappropriate or unprofessional behavior as determined by clinical staff or Program Director
- Possession or consumption of alcohol or illegal substances while in the performance of clinic related activities
- Failure to report such behaviors of fellow students
- Irresponsibility in the handling, administration or storage of radioactive material
- Disrespect, abuse, neglect or inappropriate action toward any patient in the student's care
- Failure to observe care, safety and informed cautions associated with the handling of Nuclear Medicine Instrumentation and Imaging systems

Corrective Actions for Violations in Code of Ethics

- **First Offense:** Reduction in clinical grade by 10%. Student may be reassigned to other clinical sites and will be decided upon by clinical coordinator. Student will be evaluated for dismissal from the program
- **Second Offense:** Reduction in clinical grade by an additional 20%. Student may be reassigned to other clinical sites and will be decided upon by clinical coordinator. Student will be evaluated for dismissal from the program
- **Third Offense:** Student will receive an Incomplete for clinic and will be evaluated for dismissal from the program

Scope of Practice as set by the Society of Nuclear Medicine and Molecular Imaging

NMT Scope of Practice

http://s3.amazonaws.com/rdcms-snm/production/public/NMT%20Scope%20of%20Practice%20and%20Performance%20Standards%202nd%20Ed-2022%20Complete-Approved_6-9-22.pdf

Expectations for Student Clinical Performance

The accurate and timely completion of paperwork is a critical part of health care patient management and nuclear medicine departmental compliance. The establishment of good paper documentation habits is a large component of job place requirements. Your self-directed compliance with the personal documentation required to authorize your eligibility to sit for the National Registries will be regarded heavily in your clinical performance evaluation.

- Students are expected to complete an average of **320** hours per semester during their junior year and approximately **240** hours per semester during their senior year. The first semester will be slightly lower due to a delay in starting the clinical rotations. Consequences for not obtaining the correct number of hours are outlined in the topic of **“Unexcused Absences”** and **“Tardiness”**. Timely completion of paperwork is a critical part of health care patient management. Evaluation of documents management will be evaluated each semester midterm and at the end of each semester by the clinical coordinator. Topics of assessment include remittance of clinical calendar and performance evaluations; as well as monthly exchange of monitoring devices by the correct due dates. For due dates, see the **“Tardiness”** section.
- Students will learn the specific skills necessary in diagnostic imaging and the manipulation of instrumentation for acquiring diagnostic imaging. Evaluation of mastery of clinical skill will be documented by the clinical competency forms and then recorded on the Master Clinical Competency Tracker form. Each student must demonstrate competency in a minimum of **22** nuclear medicine imaging procedures as noted **in parentheses** beside each category in the **“Topic”** column, as well as **three (3)** electives chosen from any category. In addition, students must demonstrate competency in all sections of Patient Care, Quality Control and Radiopharmacy for a total of 41 competencies. Students should average **six (6)** imaging procedures **per** semester. Any procedure performed that is not on the list may be recorded in the **“OTHER”** section and will count as an elective.
- Performance and Professional evaluations will be made twice each semester, at midterm and at the end of the semester. Both evaluations, midterm and the end of the semester, will be averaged for your final grade. The performance and professional evaluations will be given by the clinical supervisor or designee at each affiliate location and will include all aspects of your daily clinical performance. Criteria on the evaluations include but are not limited to the following: technical competency and progress, Professional interaction with staff and patients and work ethics. Please refer to the Professional behavior expectations for a more comprehensive list of professional criteria. **The technical competency evaluation will be worth 70% of the clinic grade and the professionalism evaluation will be worth 30% of the clinic grade.**
- A select few of the affiliate clinic sites will require the student to take a quiz or test based on their experiences at that specific site. This will be factored into your technical evaluation.

UHP Policy on Satisfactory Academic Standing:

SATISFACTORY ACADEMIC STANDING: The policy of the Department of Undergraduate Health Professions regarding satisfactory academic standing is as follows: A student must maintain at least a **“C”** or higher in all courses **and** maintain a minimum semester and cumulative GPA of 2.80 on a 4.0 scale to maintain good academic standing.

- **Notification of unsatisfactory academic standing:** The primary course instructor and Program Director will inform a student in writing of an unsatisfactory academic standing and will make recommendations, as appropriate, to the Program Directors Group (**PDG**).
- Student performance is reviewed each semester by the **PDG**. The PDG shall make recommendations to the Chairman regarding the progress and standing of the students in his/her program.

STUDENT CONDUCT

Academic Honesty: As stated in the AU Student Honor Code. Seen in its entirety at:

<https://www.augusta.edu/compliance/policyinfo/policy/academic-honesty.pdf>

“The University recognizes honesty and integrity as being necessary to its academic function. The following regulations protect the equality and validity of the university’s grades and degrees, and help students develop standards and attitudes appropriate to academic life.

- No student will receive assistance not authorized by the instructor in preparing any assignment, essay, laboratory report or examination to be submitted as a requirement for an academic course.
- No student will knowingly give unauthorized assistance to another person in the preparation of any assignment, essay, laboratory report or examination to be submitted as a requirement for an academic course.
- No person will sell, give, lend or otherwise furnish to any unauthorized person material that can be shown to contain the questions or answers to any examination scheduled to be given at any subsequent date, in any course of study offered by the university excluding questions and answers from tests previously administered an authorized for release by the administering faculty member.
- Plagiarism is prohibited. Themes, essays, term papers, tests and other similar requirements must be the work of the student submitting it. When direct quotations are used, they must be indicated, and when the ideas of another are incorporated into the paper, they must be appropriately acknowledged.
- Fraudulent research activity is prohibited. Misrepresentation of data collection and analysis, including falsification, fabrication or omission of data is prohibited.
- Any person taking, or attempting to take, steal or otherwise procure in any unauthorized manner any material or information pertaining to the conduct of a class including tests, examinations, laboratory equipment, roll books, etc., violates this regulation.”

UHP students will be asked to sign a pledge to uphold the Honor code prior to submitting an academic assessment. The pledge states:

“I am the student whose name is shown on top of this examination and I am the person who completed this examination. I neither received from nor gave assistance or supportive resource to any other person to answer the questions on the examination. The questions on the examination were answered by me without help or textbooks, notes, digital or Web media of any kind, or any other individual. I pledge, to the best of my knowledge that I observed or know of no violation of AU Honor Code having taken place involving myself or other students.”

If unable to answer “**true**” to the above statement, the student will be given an opportunity to briefly explain. Any response provided concerning other students and their involvement in an Honor Code violation will be closely guarded. UHP faculty regularly monitors student’s activities for evidence of academic dishonesty during all academic activities such as clinical assignments, laboratory time, and examinations both on and off campus. Any student found giving or receiving assistance not authorized by the instructor in the preparation of any assignment, essay, laboratory report, or any lecture or laboratory examination to be submitted as a requirement for a course or exhibiting any type of dishonesty will be evaluated by the instructor of records and may be brought before the PDG and /or student judiciary committee for due process and action.

Note that lying, attempted cheating, stealing, or attempted stealing, failure to report the knowledge of an Honor Code violation, and failure to protect the confidential nature of the patient-professional relationship as required by the Health Insurance Portability and Accountability Act (HIPAA) are treated as an act of academic dishonesty.

Professional Expectations

1. Students are expected to conduct themselves in a professional manner while enrolled in the program. To understand specifically the minimum professional behaviors that are expected, a list of Professional Expectations is provided in this student manual (p. 14). An assessment of Professional Expectations will be performed in every program course. This will be accomplished by having your supervisor/instructor complete a professional expectations evaluation form at the end of each rotation.
2. Evaluation of professionalism expectations constitutes **30% of the final course grade in clinical courses, and 10% of the final course grade in academic courses.** If multiple professional expectation evaluations are performed, they will be averaged for an overall professionalism grade.

Other conduct policies

See the UHP Student manual and the AU Student handbook for additional conduct policies:

<https://augustauniversity.app.box.com/v/student-manual>

Unsatisfactory Student Conduct

The primary course instructor will inform the Program Director of a student's unsatisfactory conduct, based on the professionalism criteria previously listed. The student will then receive a written notice of the circumstances. The program Director will decide if the notice should be forwarded to the Director of Student Affairs for due process and action.

Assignment Deadline Extensions: Variation or extension of assignment deadlines will be established per individual instructor.

Technical Difficulty Policy: In the RARE instance of technical difficulty the student MUST contact the primary course instructor within two hours of the problem via email, Desire2Learn posting or calling the department and leaving a message. Students will not be penalized for technical difficulties, but will be expected to resolve technical issues prior to the deadline of the next assignment deadline

Desire2Learn Daily Maintenance: A daily maintenance window is available for Desire2Learn administration between 5:00 pm and 5:30 pm (EST). If you are not able to connect between these times, try again after 5:30 pm (EST). Avoid this time for posting and taking quizzes because you may be disconnected from the server during this time.

Clinical Forms

Form Descriptions:

Student Clinical Site Orientation Guidelines: This form outlines the performance expectations between the Affiliate Education Supervisor (AES) and student. The document is to be signed by both parties at the beginning of each clinical rotation. The document should be given to the Clinical Instruction Coordinator when completed.

Student Attendance and Procedure Calendar: This paper calendar is to be filled out at your clinical rotation site and will serve as a record of your clinic hours. Your time in and out is to be reviewed and signed by the Affiliate Education Supervisor. The calendar will also be used to record the procedures observed and performed each day. The calendar will be reviewed by the clinical coordinator twice per semester; midterm and at the end of the term. This record will be the primary document insuring completion of your practical application training and eligibility to sit for your credentialing examination. Failure to keep up with this portion of your documentation could seriously delay your graduation.

Student Absence Request/Reporting Form: Students should fill out the absence request/reporting form, have it signed by the Affiliate Education Supervisor and then submit it to the clinical instruction coordinator prior to being absent from clinic. The request should be made at least **one** week prior to the expected absence. The student, clinical site and coordinator should each retain a copy of the form. In the case of an illness or unforeseen circumstance, the absence/reporting form should be filled out and submitted upon returning to clinic. Under this type of circumstance, the student is expected to contact the clinical site **and** the clinical coordinator within **two hours** of scheduled work time. Illness lasting more than two consecutive days, will require a physician's excuse and clearance to return to clinic.

Clinical Competency Requirements: This is a master log (Tracker) of all the possible competencies. The form outlines the mandatory and elective competencies. Each student must demonstrate competency in 22 nuclear medicine imaging procedures as noted **in parentheses** beside each category in the "**Topic**" column, as well as **three (3)** electives chosen from any category. In addition, students must demonstrate competency in all sections of Patient Care, Quality Control and Radiopharmacy for a total of 41 competencies.

Clinical Imaging Competency: This form is for the mastery of a single competency and is to be filled out and signed by a certified nuclear technologist conducting the evaluation.

Student Evaluation of Clinical Expertise: Student performance evaluations will be made twice each semester, at midterm and at the end of the term. This performance grade is given by the Affiliate Education Supervisor at the student's clinical site location and will include all aspects of your daily clinical performance. **Constitutes 70% of the clinical course grade.**

Student Professional Behavior Evaluation: This evaluation assesses psycho-social performance, i.e., communication, attitude, initiative, integrity, responsibility, altruism, etc. It is to be completed by the Affiliate Education Supervisor at midterm and the end of each clinical rotation. **Professionalism constitutes 30% of the clinical course grade.**

Quality Control Task List: Quality Control Task list for routine, pharmacy and imaging floor competencies. There are no individual competencies associated with this list. A grade of Complete or Incomplete will be given. Once a “Complete” has been achieved, the **six** competencies in the Quality Control section on the Master Competency Tracker may be signed off. Task availability depends on the clinical site. The List may need to be completed throughout multiple clinical rotations

I-131 Therapy Observation Form: This form is designed to aid the clinical affiliate instructors in evaluating a student’s understanding of this therapy procedure. This form can be used to simulate competency in the summer semester of the junior year.

Clinical Competencies in Nuclear Cardiology: There are no individual competencies associated with this check list; instead, a grade of Complete or Incomplete will be given. The number of items you will be able to complete will be determined by your Cardiology rotation sites. Once a “Complete” has been achieved, the **four** competencies in the **Cardiology** section on the Master Competency Tracker may be signed off.

Clinical Competencies in PET: There are no individual competencies associated with this check list; instead a grade of Complete or Incomplete will be given. The number of items you will be able to complete will be determined by your PET rotation sites. Once a “Complete” has been achieved, the **five** competencies in the PET section on the Master Competency Tracker may be signed off.

Radiopharmacy Competency Form: Students will have the opportunity to complete this form at a combination of different rotations. Augusta students may complete this form during rotations at AU Health, DDEAMC, Cardinal Health nuclear pharmacy or Augusta Isotopes nuclear pharmacy. Distance (Web-based) students may complete this form during their rotations at Atlanta’s Emory University Hospital and Triad Nuclear Pharmacy in Athens. There will not be any individual competencies given for Radiopharmacy. A grade of Complete or Incomplete will be given for this competency form. Once a “Complete” has been achieved, the **five** competencies in the Radiopharmacy section on the Master Competency Tracker may be signed off. These competencies must be completed by graduation.

Augusta University
Student Clinical Site Orientation Guidelines

All clinical sites will provide an onsite clinical orientation for each student the first day of clinical attendance. The Affiliate Education Supervisor or designee should check off each item as it is completed. Students should return this check-off sheet to the Programmatic Clinical Coordinator within the first week.

- Identification of the go-to person concerning all aspects of student clinical education at your particular site.
- Clinical schedule hours to correspond with program didactic coursework and specific operational dynamics of your clinical site.
- Oral reference to student clinical policies as relates to clinical rotation policies outlined in the AU NMT Program Manual. Be sure to address:
 - Hours of attendance (student provides copy of current weekly class and clinical schedule)
 - Clinical assignments, case study, demo days' dates and competency due dates.
 - Notification policies related to student absences.
 - Policy on personal telephone calls.
 - Policy on sign in and sign out.
 - Location of computer for access if available.
 - Verification of student's memo book for taking clinical notes
 - Identification of procedures specific to your clinical site.
- Tour of the facilities to include:
 - Location of imaging instruments and hot lab
 - Location of sign in sheet if applicable.
 - Location of supplies and important phone numbers
 - Location of departmental protocol/ procedural manual
 - Patient code procedure (telephone number, verbal alert procedure)
- Identification of institutional policy for student venipuncture and admission of radioactive and non-radioactive agents:
 - Students can do direct access venipuncture to PATIENTS and administration of radioactive and non-radioactive agents
 - Students can do direct access venipuncture to PATIENTS and administer non-radioactive agents (saline flush, etc., butterflies, angiocaths, etc.)
 - Students may not participate in injection of patients, but may practice on other students and staff, under the direct supervision (in the room and paying close attention) with direct and secondary venous access.
 - Students may not participate in venipuncture techniques.

Student Acknowledgement

Affiliate Education Supervisor

Student Attendance and Procedure Calendar.											
Student:		Year:				Month:		Clinic Site:			
		Monday		Tuesday		Wednesday		Thursday		Friday	
Week 1	Date:		Studies		Studies		Studies		Studies		Studies
Hours	Out:										
	In:										
	Lunch:										
	Total:										
Week 2	Date:										
Hours	Out:										
	In:										
	Lunch:										
	Total:										
Week 3	Date:										
Hours	Out:										
	In:										
	Lunch:										
	Total:										
Week 4	Date:										
Hours	Out:										
	In:										
	Lunch:										
	Total:										
Week 5	Date:										
Hours	Out:										
	In:										
	Lunch:										
	Total:										
Monthly Hours	**Monthly CT Hours			Study Abbreviations:				PTS=Parathyroid			
	Tech Print Name and sign:			B=Bone Scan		F=Floods		TS=Thyroid		H =Hida	
Program Hours				CP=Cardiac Perf		GI=GI bleed		RE=Renal ERPF		P = PET	
				CS=Chi Square		L=Liver		RG=Renal GFR		M=Muga	

*Students will take a lunch. The time and length will be determined by the clinical site

Clinical Calendar Example

Initials of clinical technologist overseeing the students

Student Attendance and Procedure Calendar.															
Student:		Joe Nuclear		Year:		2015		Month:		June		Clinic Site:		Best Hospital	
		Monday		Tuesday		Wednesday		Thursday		Friday					
Week 1	Date:	6-1		6-2		6-3		6-4							
Hours	Out:	16:30		16:00		16:45		15:30							
	In:	07:00		07:00		07:30		07:00							
	Lunch:	30min		30min		30min		No lunch							
	Total:	9 hrs.		8 1/2 hrs		8 3/4 hrs		8 1/2 hrs							
	Studies	B RE TS		H B RG		L GI B		TS B lung							
34.75															
Week 2	Date:	6-8		6-9		6-10		6-11							
Hours	Out:	16:00		16:00		16:30		16:00							
	In:	07:00		07:00		07:00		07:00							
	Lunch:	30min		30min		30min		30min							
	Total:	8 1/2 hrs		8.5 hrs		9 hrs.		8.5 hrs							
	Studies	PTS H CP		lung H B		RE TS B		H B L							
34.5															
Week 3	Date:	6-15		6-16		6-17		6-18		6-19					
Hours	Out:			16:00		16:30		16:00		16:00					
	In:			07:30		07:00		07:00		07:00					
	Lunch:			30min		30min		30min		30min					
	Total:			8 hr.		9 hrs		8.5 hrs		8.5 hrs					
	Studies	SICK		B L		F B GI L		B L GI		B TS CA					
34															
Week 4	Date:	6-22		6-23		6-24		6-25							
Hours	Out:	16:30		16:30		16:30		16:00							
	In:	07:00		07:00		07:30		07:00							
	Lunch:	30min		30min		30min		30min							
	Total:	9 hrs.		9 hrs.		8 1/2 hrs		8.5 hrs							
	Studies	lung B GI		H B TS		COR F RE		TS lung B							
35															
Week 5	Date:	6-29		6-30											
Hours	Out:	16:00		16:30											
	In:	07:00		07:00											
	Lunch:	30min		30min											
	Total:	8.5 hrs		9 hrs											
	Studies	H B RG		TS B lung											
17.5															
Monthly Hours	155.75		**Monthly CT Hours		130		Study Abbreviations:				PTS=Parathyroid				
Program Hours	845.5		Tech Print Name and sign:		A Nuclear Tech, CMT		B=Bone Scan F=Floods TS=Thyroid H=Hida				RE=Renal ERPF P = PET				
							CP=Cardiac Perf GI=GI bleed RE=Renal ERPF M=Muga				CS=Chi Square L=Liver RG=Renal GFR				

Time "out" is listed first for easy calculations using military time. It is your choice as to which one you use.

Initials of clinical technologist overseeing the students

g
NT
NT
g
NT

Student's monthly hours. Will be checked during midterm evaluation and the end of term

Student's monthly CT hours. Signature of

technologist for verification

*Procedures the
students
observed or
assisted with
on that date*

Augusta University Nuclear Medicine Technology Program

STUDENT ABSENCE REQUEST / REPORTING FORM

Name: _____

I request time off for the following day(s): _____

Type of absence requested:

Personal Day

Other (use note section below)

Sick **

Notes and Plans for making up any clinical days missed:

Faculty Notified:

Name: _____

Date: _____ Time: _____

Method of Contact: _____

Clinical Site Notified:
(if applicable)

Site & Person Contacted: _____

Date: _____ Time: _____

(This section to be filled in by course Faculty)

Approved: Yes No Signature: _____

Comments: _____

** *Must submit doctor's excuse for more than 2 days*

Clinical Competency Requirements (Tracker)

Each student must demonstrate competency in **22** nuclear medicine imaging procedures as noted in parentheses beside each category in the “**Topic**” column, as well as **three (3)** electives chosen from any category. In addition, students must demonstrate competency in all sections of Patient Care, Quality Control and Radiopharmacy for a total of **41** competencies. Students should average **six (6)** imaging procedures **per semester**. Any procedure performed that is not on the list may be recorded in the “**OTHER**” section and will count as an elective.

m ~ Mandatory

P- Patient

Sim- Simulated

Student _____

Topic	PROCEDURE	<i>m</i>	DATE	Patient or Simulated	Verified By
ABSCESS / INFECTION (0)	White Blood Cell Imaging Gallium				
	Other (e.g., Ga-67 citrate, F-18 FDG, etc.)				
SKELETAL (2)	Planar Spot (Limited)				
	Whole	<i>m</i>			
	3Phase				
CENTRAL NERVOUS SYSTEM (0)	Brain Planar				
	Brain Dynamic				
	Cisternography (Shunt/ Hydrocephalous)				
	Cisternography CSF leak				
	DAT scan (Alzheimer's)				
CARDIOVASCULAR (4)	Shunt Patency				
	Viability				
	Amyloid Imaging				
	Gated Blood Pool Study (Muga)				
	Myocardial Perfusion-Stress Gated SPECT	<i>m</i>			
	Myocardial Perfusion-Rest non-gated SPECT	<i>m</i>			
	Pharmacological	<i>m</i>			
Treadmill operation (Bruce/Modified Bruce)	<i>m</i>				
ENDOCRINE / EXOCRINE (1)	Thyroid	<i>m</i>			
	Thyroid Metastatic Survey (Total Body I131)				
	Parathyroid				
GASTROINTESTINAL (3)	Gastroesophageal				
	Gastric Emptying	<i>m</i>			
	GI Bleed	<i>m</i>			
	Liver/Spleen Hemangioma				
	Hepatobiliary	<i>m</i>			
	Liver/Spleen Planar				
	Meckel's Diverticulum				

Topic	PROCEDURE	<i>m</i>	DATE	Patient or Simulated	Verified By
GENITOURINARY (1)	Renal: Functional	<i>m</i>			
	Renal: Cortical imaging				
	Cystography				
TUMOR/ANTIBODY (0)	Lymphoscintigraphy (Breast or Melanoma)				
	Adrenal				
	Neuroendocrine				
	Prostascint Scan				
	Other (e.g., Ga 67 citrate)				
NONIMAGING (1)	Thyroid	<i>m</i>			
	Urea Breath Test				
RESPIRATORY (2)	Perfusion	<i>m</i>			
	Ventilation (Gas or	<i>m</i>			
	Quantitative				
THERAPEUTIC (1)	Thyroid: Ablation or Hyper (simulated)	<i>m</i>			
	Therapeutic Palliative bone				
	Selective Internal Radiation Therapy (SIRT)				
	Zevalin (Lymphoma)				
	Other (e.g., Endocrine)				
PATIENT CARE (8)	CPR Certified	<i>m</i>			
	Vital signs- Blood	<i>m</i>			
	Vital signs - Pulse	<i>m</i>			
	Vital signs - Respiration	<i>m</i>			
	Venipuncture	<i>m</i>			
	Oxygen Saturation	<i>m</i>			
	Assisted Patient Transfer (e.g. slider board)	<i>m</i>			
	Dysrhythmias	<i>m</i>			
	EKG Placement (3 & 12 lead)	<i>m</i>			
	Maintain and Care for Patient Ancillary Equipment (e.g., IV pump, Collection Bag, Oxygen Delivery)	<i>m</i>			
PET (5)	PET Single Pulmonary Nodule				
	PET Small cell lung cancer				
	PET Melanoma				
	PET Lymphoma				
	PET Colorectal CA				
	PET Head Neck/Esophageal CA				
	PET Breast CA				
	PET Brain CA				
	PET Prostate CA				
	PET Ovarian CA				
	PET Testicular CA				
	PET Thyroid CA				
	PET Cardiac Viability				
	PET Myocardial Perfusion Imaging				

Topic	PROCEDURE	<i>m</i>	DATE	Patient or Simulated	Verified By
SPECT (2)	Bone				
	Brain (epilepsy, tumor, dementia, etc.)				
	Liver				
	Tumor				
	Cardiac				
	Lung				
	Parathyroid				
	Renal				
QUALITY CONTROL (6)	Gamma Camera (uniformity, resolution, COR)	<i>m</i>			
	Dose calibrator (constancy, linearity)	<i>m</i>			
	Well counter/Probe (energy resolution)	<i>m</i>			
	Survey meter (battery check and Constancy)	<i>m</i>			
	PET QC (Reference or Blank Scan)	<i>m</i>			
	CT QC (Reference or Blank Scan)	<i>m</i>			
RADIOPHARMACY (5)	Generator	<i>m</i>			
	Blood Product	<i>m</i>			
	Kit	<i>m</i>			
	Kit	<i>m</i>			
	Draw Patient Dose	<i>m</i>			
MISCELLANEOUS	Shunt studies				
	DEXA				
	Lacrimal				
	Brain Death				
	Bone Marrow				
	Gallium Lung scan				
	RBC mass				
OTHER					

Clinical Imaging Competency Form

This form is used to record mastery of individual nuclear medicine procedures (excluding Cardiology, PET, QC and Radiopharmacy). If student fails any (applicable) area, they must repeat the procedure until they pass. The clinical supervisor or their designee must sign the form once the student has demonstrated mastery.

Student Name:	Date:
Clinical Site:	Procedure:
Rated Factors	
	<input checked="" type="checkbox"/>
Patient Care: Preparation for Study	
1 Procedure requisition verified, patient ID and birth date verified	<input type="checkbox"/>
2 Proper intravenous technique (no infiltration, no 2-handed recapping)	<input type="checkbox"/>
3 Procedure explained to patient, patient history obtained	<input type="checkbox"/>
4 Check for contraindications, asked if pregnant/breast feeding	<input type="checkbox"/>
Nuclear Pharmacy	
5 Verified correct radiopharmaceutical within 10% limits.	<input type="checkbox"/>
6 Verified syringe is labeled twice and matches patient information	<input type="checkbox"/>
7 Wore gloves while transporting radioactive product	<input type="checkbox"/>
8 Properly labeled and disposal of radioactive/biologic waste	<input type="checkbox"/>
Clinical Imaging Skills	
9 Proper collimator confirmed	<input type="checkbox"/>
10 Correctly set parameters for the scan (scan speed, counts, time, orientation)	<input type="checkbox"/>
11 Verified Anatomical landmarks/markers in appropriate position	<input type="checkbox"/>
12 Method of data collection correct (SPECT, dynamic, Planar)	<input type="checkbox"/>
13 Patient to detector height was appropriate, and correct views obtained	<input type="checkbox"/>
14 Provided oral understanding of procedure and rationale	<input type="checkbox"/>
Radiation Safety	
16 Used syringe shields	<input type="checkbox"/>
17 Employed ALARA principle of time distance shielding	<input type="checkbox"/>
18 Contained radioactive materials (no drops on the sheet)	<input type="checkbox"/>
19 Wore laboratory coat and proper radiation monitoring devices	<input type="checkbox"/>
Image Data Evaluation and Processing	
20 Images evaluated for any additional information needed	<input type="checkbox"/>
21 Images were properly annotated and organized	<input type="checkbox"/>
22 Thorough information was given to the radiologist	<input type="checkbox"/>
23 Image data was processed according to study protocol	<input type="checkbox"/>
Evaluator comments: Note any comments while completing the task.	
Evaluators Signature and date:	

Student Performance Evaluation for Clinical Expertise

Evaluate the following characteristics using a scale of 60%-100%. Grade is calculated (**sum of % / # of factors used**) and expressed as a percentage value. Additional comments are welcome. Students are to be evaluated on all applicable factors.

Student Name: _____	Date: _____	Grade: _____				
Clinical Site: _____	Point of Evaluation (circle one):	Mid-Term	End of Rotation			
Rated Factors for Clinical Performance evaluation		Evaluation Scale				
		60%	70%	80%	90%	100%
Patient Care						
1. Checks patient ID, directives, takes patient history						
2. Washes hands between each patient, and follows universal precautions						
3. Knows proper protocol for calling for patients, calling a code, calling for security						
4. Maintains HIPPA guidelines, and patient rights						
Nuclear Pharmacy						
5. Performs constancy, accuracy, linearity, geometry, and chi-square tests						
6. Properly arrives packages and performs surveys. Can log dose into pharmacy log book						
7. Properly labels syringes, and follows safe handling of pharmaceuticals						
8. Properly labels and disposes of radioactive/biologic waste						
Clinical Imaging Skills						
9. Able to perform routine clinical imaging procedure, altering procedure when necessary						
10. Understands and correctly operates imaging and image process equipment						
11. Participates and understands quality control procedures and reports machine errors						
12. Oral demonstration of procedural rational providing outline of procedure before starting the study						
Radiation Safety						
13. Wears laboratory coat and proper radiation monitoring devices						
14. Employs ALARA safety techniques of time, distance, and shielding						
15. Knows protocol for radioactive spill containment						
16. Uses syringe shields						

Rated Factors for Clinical Performance evaluation (cont.)

Personal and Interactive

- 17. Initiative, use of free time, organizational ability, maintains personal log of procedures
- 18. Verbal skills with patients and staff
- 19. Team participation, attitude, receptive to instruction, can work under pressure
- 20. Score for clinic generated test (attach copy of student test to this document if applicable)

Evaluation Scale				
60%	70%	80%	90%	100%

Evaluator's Comments: _____

Evaluator's Signature _____ **Date** _____

Student's Signature _____ **Date** _____

Student Professional Behavior Evaluation

Student: _____ Clinical site: _____ Date: _____

Midterm End of Rotation

Evaluate the following behaviors by checking the appropriate box. **For any items in which a “some met” or “not met” score is given, provide at the end of this form specific comments, action taken, follow-up, and/or whether additional action is needed for that item.** *This score comprises 30% of the course grade.

Grading Rubric for Expectations

Exceeded	Student has met all criteria within the category during the entire course/rotation
Met	Student has met all but one of the criteria listed within the category or has no more than 2 violations of any of the criteria during the entire course/rotation
Mostly Met	Student has met all but two of the criteria within the category or has no more than 3 violations of any of the criteria during the entire course/rotation
Some Met	Student has met all but three of the criteria within the category or has no more than 4 violations of any of the criteria during the entire course/rotation.
Not Met	Student has not met the majority of the criteria within the category or has more than 5 violations of any of the criteria during the entire course/rotation.

I. ATTITUDE:

Expectations: Exceeded(25)[];Met(23)[];Mostly Met(18)[];Some Met(13)[];Not Met(0)[]; N/A []

Compassion/Empathy: demonstrate calm, compassionate, helpful demeanor toward those in need; respond appropriately to the emotional response of those in which you interact; take initiative to help others with both spoken and unspoken needs, problems, issues; demonstrate empathy in professional interactions with others; be supportive and reassuring to others

Acceptance of Constructive Criticism: Receive constructive criticism with a positive attitude and use feedback to improve their behavior /performance; provide constructive criticism with a positive manner so it will be received by others in a productive way

Respect: treat others with dignity and respect; refrain from generating or spreading gossip, using profanity, demeaning, threatening, abusive or other negative communication; behave in a manner that brings honor to their school, discipline and employer; avoid criticism of people in front of others; treat equipment and other resources with due care

Contentiousness: Be meticulous and careful in conducting professional tasks; consistently strive for excellence in professional activities

Sincerity/Genuineness: demonstrate authentic expression/communication by appropriate use of voice tone, volume and inflection; avoid use of patronizing terms (Sweetie, honey, etc.) and impersonal communication; recognize a job well done by others

II. INTEGRITY:

Expectations: Exceeded(25)[];Met(23)[];Mostly Met(18)[];Some Met(13)[];Not Met(0)[]; N/A []

Dependability/Reliability: be dependable in all professional dealings and honor their commitments

Accountability: Be accountable for their actions and the consequences of their actions

Honesty: be consistently truthful and forthright, fair and credible; be trustworthy by those with whom they interact; be trusted with the property of others, refrain from deceptive practices; avoid being placed in a compromising situation, either directly or by association; report actions deemed dishonest, illegal or unethical to the proper authorities for action

Exercise Sound Judgment: make sound decisions based on established rules and regulations, fact and logic

Workload sharing /Teamwork: show proper respect for group members, work cooperatively with others; actively participate in group work from beginning to completion; contribute above and beyond minimum requirements; value the knowledge, expertise and suggestions of group members; communicate with other group members to resolve problems; participate in group discussion without attempting to dominate; put the success of the group above self-interests; be willing to mentor those in need of encouragement and direction

Responsibility: be competent before performing a task independently; without request, take on and follow through with tasks; demonstrate self-reliance in carrying out professional tasks; provide realistic time estimates for completion of specific tasks; insure tasks within their responsibility are completed fully and in a timely manner; act with the safety of yourself and others in mind; look out for the well-being of others

Demonstration of Professionalism Code of Ethics: be intimately familiar with their discipline's Code of Ethics and potential consequences of noncompliance; demonstrate a high standard in personal and professional behavior; report violations of the Professional Code of Ethics to the proper authorities for action

Quality of Work: set a high standard for quality of professional expertise and outcomes; excel in productive use of time and resources; choose to perform tasks according to proper protocols rather than taking "shortcuts"; remain abreast of new information in your professional discipline and healthcare in general

Admission of Mistakes: acknowledge mistakes/errors, apologize and amend appropriately

III. COMMUNICATION:

Expectations: Exceeded(15)[];Met(13)[];Mostly Met(10)[];Some Met(7)[];Not Met(0)[]; N/A []

Confidentiality: protect and preserve personal confidential information of others to which you may have access; observe appropriate conversational etiquette in various professional settings (elevators, cafeteria, work area, offices, classrooms, hallways, etc.)

Level/Quality of Communication: create comfortable communicative atmosphere; communicate with volume, tone, terminology and nonverbal cues appropriate to the situation presented; convey written messages appropriately; provide appropriate information to others that will assist them with tasks/procedures at hand; listen actively and confirm accuracy of interpretation of communications; adjust communication strategies to fit various situations; encourage questions to clarify information; use humor appropriately in communications

Communication Process: follow established rules and regulations regarding hierarchy of communications; communicate in a timely manner

Perception of Others' Needs: refrain from personal activities while in professional environments; demonstrate proper discernment (re: content of professional communications-interactions is relevant, appropriate and respectful)

Politeness: respond to others in a positive manner by smiling and speaking with a genuine tone; display appropriate manners in interactive with others (ex. Use appropriate surnames and titles in formal/professional interactions; identify yourself and your role when communicating with others; allow patients, elders, etc. priority in entering and exiting buildings and elevators); avoid interrupting speaker

Emotional Control: demonstrate appropriate physical, verbal and emotional restraint in professional interactions with others

Observance: anticipate needs of others based on physical, verbal and nonverbal cues

Cultural Sensitivity: demonstrate understanding of cultural, religious and spiritual differences of others; exhibit appropriate sensitivity in interactions with those of different cultures, religions and spiritualities

Conflict Resolution/Diplomacy: use tact when presented with (potentially) volatile situations; follow appropriate protocol in resolution of conflict; exhibit proper restraint in communication during conflict resolution

IV. MOTIVATION:

Expectations: Exceeded(15)[];Met(13)[];Mostly Met(10)[];Some Met(7)[];Not Met(0)[]; N/A []

Preparation for Assignments: organize information appropriately for use/study; bring prior assigned materials with them to designated activities; put forth genuine effort to prepare for, and complete, assignments; use outside resources in addition to required texts to research relevant information; demonstrate both quantity and quality of effort in completing assignments; fully complete assignments by their deadlines

Attendance: be early or on time for all activities, even when attendance is optional; if unavoidably late or absent, contact appropriate party ahead of time (or as soon as reasonably possible in an emergency) to inform clinic site of change in arrival time. In the event of an absence, take responsibility for getting information missed and requesting rescheduling of activities if appropriate or allowed

V. INDEPENDENCE/LEADERSHIP:

Expectations: Exceeded(10)[];Met(9)[];Mostly Met(7)[];Some Met(5)[];Not Met(0)[]; N/A []

Respect for authority: understand Rules & Regulations of unit of which you're a part; comply with established R&R in task completion; champion and communicate the mission and vision of your school, employer, profession; uses grievance mechanisms appropriately

Adaptability: be flexible in dealing with issues that are not absolute in nature; appropriately modify and reorganize rules and regulations/ protocols as needed; adapt to different instructors or modes of instructions; accept changes in assignments and schedules without flustering

Understanding of Limitations: do not attempt tasks beyond your capabilities without instructor/supervisor’s consent

VI. SELF-WORTH/ASSESSMENT/ALTRUISM:

Expectations: Exceeded(10)[];Met(9)[];Mostly Met(7)[];Some Met(5)[];Not Met(0)[]; N/A []

Appearance: meet or exceed standards for professional dress

Personal Hygiene: meet or exceed standards for professional grooming

Recognition of Strengths/Weaknesses: use feedback from other professionals, peers, and self-reflection to identify strengths and weaknesses; proactively look for ways to improve your behavior and performance; value the positive contributions you make to your school, discipline and employer

Desire to Help Others: appreciate and recognize others for their contributions; be an advocate for those you serve; be involved in activities that improve your community and /or other groups you desire to help

***Specific comments, actions taken, follow-up and/or whether additional action is needed for an item:**

I.	
II.	
III.	
IV.	
V.	
VI.	

Score (add up points for each section):

I. _____

IV. _____

II. _____

V. _____

III. _____

VI. _____

Total Score: _____/100 x 100 = _____ %

Evaluator’s Signature _____ **Date** _____

Student’s Signature _____ **Date** _____

**Nuclear Medicine Technology Program
Quality Control Task List**

Quality Control Task list for routine, pharmacy and imaging floor competencies. There are no individual competencies associated with this list. As each task is completed, have the supervising technologist initial the corresponding competencies in the **Quality Control** section on the Master Competency Tracker. Task availability depends on the clinical site. The List may need to be completed throughout multiple clinical rotations.

Student: _____ **Clinical Site:** _____ **Semester:** _____

Areas:	Procedures	Frequency	Date Completed	Tech's Initials
Dose Calibrator	Constancy			
	Linearity			
	Accuracy			
	Geometry			
Survey Meter	Battery Check			
	Background			
	Calibrate			
	Check source			
Delivery	Check in/Surveys			
	Check out/Surveys			
Well Detector	Voltage			
	Sensitivity			
	Background			
	Energy Resolution			
	Linearity			
Uptake Probe	Voltage			
	Sensitivity			
	Energy Resolution			
	Linearity			
Work Area	Room Surveys			
	Wipes			
Camera	Extrinsic flood			
	Intrinsic flood			
	COR			
	Uniformity			
	Bars/phantom			
	Flood correction			
Decontamination	Simulated			
	Actual			

Technologist's Signature _____

Iodine-131 Therapy Observation Form

This form is designed to aid the clinical instructors in evaluating student's understanding of a nuclear medicine I131 therapy procedure. Please complete the form and remit to your clinical coordinator.

Student Name:

Date:

Clinical Site:

Knowledge Assessment

1. What is the half-life and energy of Iodine-131?
2. What are the main reasons for I-131 use?
3. What determines whether or not a patient is hospitalized for I-131 treatment?
4. What determines when a patient can be released from the hospital?
5. What precautions are taken in the patient's room to minimize contamination?
6. Name precautions taken to limit radiation exposure to visitors and hospital staff.
7. Describe the procedures used in administration of I-131 by physician and radiation safety officer, beginning from when they enter the Radiopharmacy.
8. The physician gives patient instructions on what to do after the dose is administered. What are the instructions?
9. Name precautions the patient practices at home after the release from the hospital?
10. If the patient is on thyroid medication, must it be discontinued before the treatment; why or why not?

The student was able to answer these questions to my satisfaction, and has received a passing grade for this competency.

Technologist(s):

Date:

Nuclear Cardiology Competency Form

There are no individual competencies associated with this check list. The number of items you will be able to complete will be determined by your Cardiac rotation sites. When completed, have the supervising technologist initial the corresponding competencies in the **Cardiology** section on the Master Competency Tracker.

Student _____

Task	Date Performed	Tech Initials
Instrument QC		
Dose Calibrator constancy		
Wipe/Survey meter check		
Daily Floods:		
Acquisition of		
Evaluation of		
Weekly Bars:		
Acquisition of		
Evaluation of		
Center of Rotation (COR)		
Monthly High Count Floods (if available)		
Pre-test evaluation		
Assessment for appropriateness of study (Indications)		
Patient History		
Medications		
NPO		
Contraindications		
Consent Form		
IV access		
Base line vitals		
Calculate Maximum Predicted Heart rate and 85%		
Stress		
Modified 12 lead setup		
Bruce protocol		
Modified Bruce protocol		
Pharmacologic stress		
Lexiscan		
Persantine (Dipyridamole)		
Adenosine (Adenocard)		
Syringe Pump		
Dobutamine (Dobutrex)		
Infusion pump		
Termination criteria		
Identify common rhythms (Normal sinus, SVT, VT, PVC, Atrial Fib, LBBB, Pacemaker spikes)		

Task	Date Performed	Tech Initials
Imaging		
Check chest for any attenuators		
Rest		
Maximize Patient Comfort		
Positioning		
Stress		
3 lead EKG (gated imaging)		
Maximize Patient Comfort		
Positioning		
Prone v/s Supine (if available)		
Modified arm positioning		
Modify imaging parameters (i.e. Imaging time)		
Processing		
Evaluate for motion		
Motion correction		
Attenuation correction (if available)		
Image Reconstruction		
Image Reorientation		
Polar Maps		
Trans-ischemic Dilatation (TID)		
Heart/Lung ratio		
Protocols		
Thallium Viability		
Hot PYP -Myocardial Infarction scan (if available)		
Gated Blood Pool (MUGA)		
First Pass		
Myocardial Perfusion Imaging (MPI) non-gated SPECT		
Myocardial Perfusion Imaging (MPI) gated SPECT		
One day protocol		
Two day protocol		
Dual isotope		
Thallium 201		
Tc99m (Sestamibi, Tetrophosmin)		
Correlative Studies		
Echo		
Cardiac Catheterization		
CT		
MR		

Technologist's Signature _____

Clinical Competency in PET/CT

There are no individual competencies associated with this check list. The number of items you will be able to complete will be determined by your PET rotation sites. When completed, have the supervising technologist initial the corresponding competencies in the **PET** section on the Master Competency Tracker.

Student _____ **PET Site** _____

Task (daily workflow order)		** Items are Mandatory	Date Performed	Tech Initials
Daily Survey Meter Check **				
Dose Calibrator constancy **				
Wipe Counter calibration **				
Glucometer QC **				
FDG Package Survey **				
FDG Package Wipe Test **				
PET Scanner QC **				
Take Patient History **				
IV Placement **				
Glucose Testing **				
FDG Pre-dose assay **				
FDG Injection				
FDG Residual Determination				
Patient Computer Acquisition **				
Patient Positioning (Bed & Laser Placement) **				
Bed Determination **				
Emission Reconstruction **				
Patient Study Transfer/Archive				
Return Package Wipes **				
Area Survey **				
PET/CT QC			Date Performed	Tech Initials
Daily				
	PET QC **			
	CT QC (Head/Body Phantom) **			
	Transmission (Non-CT) units			
	Noise and Artifact Test **			
	CT Tube Conditioning **			
	Air Calibration **			
Monthly				
	SUV Determination			
	Air Calibration			
	CT Impulse Response			
	CT Slice Width Test			

Clinical Competency in PET (continued)

PET Neurology Imaging – Complete 1 (circle one)		Date Performed	Tech Initials
78608	Brain Imaging Metabolic Evaluation		
	<i>Seizure / Epilepsy / Trauma / Dementia</i>		
78609	Brain Imaging Perfusion Evaluation		
	<i>Tumor / Trauma</i>		
PET Cardiovascular Imaging – Complete if Possible		Date Performed	Tech Initials
78459	Myocardial Imaging Metabolic		
78491	Myocardial Imaging Single		
	<i>Stress or Rest</i>		
78492	Myocardial Imaging Stress & Rest		
	<i>Rubidium 82</i>		
Pet Oncology Imaging ** Starred Items are Mandatory		Date Performed	Tech Initials
78814	Tumor Imaging Limited Area w/ CT Attn.		
	<i>Surgical</i>		
	Head and Neck ** (minimum of one-circle)		
	<i>Larynx / Pharynx / Tongue</i>		
78816	Tumor Imaging Whole body w/ CT Attn.		
	<i>Melanoma **</i>		
78815	Tumor Imaging Top of Skull to Mid-Thigh w/ CT Attn. (X3)		
	<i>Breast</i>		
	<i>Pancreatic</i>		
	<i>Renal</i>		
	<i>Renal Post-Void</i>		
	<i>Liver</i>		
	Respiratory		
	<i>Pulmonary</i>		
	Endocrine ** (minimum of one - circle)		
	<i>Adrenal / Lymphoma / Thyroid</i>		
	Musculoskeletal		
	<i>Sarcomas</i>		
	Gastrointestinal ** (X2)		
	<i>Stomach</i>		
	<i>Esophageal</i>		
	<i>Colorectal</i>		
	<i>Rectal</i>		
	Reproductive (minimum of one - circle)		
	<i>Ovarian / Cervical / Endometrial</i>		
	<i>Prostate / Testicular</i>		

PET Procedure Log

Name _____

Each student must observe or perform a minimum of 30 PET Procedures (cumulative) during their PET rotations.

	DATE		PROCEDURE
1.			
2.			
3.			
4.			
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RADIOPHARMACY

There are no individual competencies associated with this checklist. Once completed, have the supervising technologist/pharmacist initial the corresponding competencies in the **Radiopharmacy** section on the Master Competency Tracker.

STUDENT _____

I. KIT PREPARATION

Kit Name:	Completion Date and Initials				*Preceptor's Signature
1. Calculate Bulk activity concentration and draw amount needed					
2. Perform Moly breakthrough					
3. Perform Aluminum breakthrough					
4. Reconstitute kit with correct volume					
5. Particle Size (MAA/ Sulfur Colloid)					
6. Perform TLC					
7. Perform pH (if applicable)					
8. Draw calculated patient dose					

➤ *The student is to show proficiency in all areas*

** Full signature of the preceptor when competency is demonstrated.*

II. BLOOD PRODUCT LABELING

Blood Product Labeling	Completion Date and Initials				*Preceptor's Signature
P-performed O-observed					<i>Please note if performed or observed</i>
Tc99m LABELED RBC (e.g., Ultra Tag®)					
In-111 Oxine (e.g., White blood cell labeling)					
Tc99m HMPAO WBC-Labeling (e.g. Ceretec™)					

III. GENERATOR

Task	Completion Date and Initials				*Preceptor's Signature
GENERATOR ELUTION					

IV. PARTICLE REDUCTION

Task	Completion Date and Initials				*Preceptor's Signature
MAA particle reduction calculation / process					

V. MISCELANEOUS

Task	Completion Date and Initials				*Preceptor's Signature
Dose Calibrator QC					
Transportation Index / Shipping					
Rad Hazard signs / corresponding exposure level					

Technologist's (pharmacist) signature _____

ALARA LIMITS

The Augusta University NMT Program strictly monitors student radiation exposure. All students are provided with a ring and badge dosimeter, which are exchanged monthly. Radiation exposures are monitored and reported monthly. Any student exceeding ALARA levels will be notified.

It is the goal of all radiation workers to observe and maintain ALARA standards and practices. That is to keep radiation exposure to technologists, patients, and the public As Low As Reasonably Achievable (ALARA). We do this by closely observing time, distance, shielding. When radiation exposure reaches triggers above established minimum levels for radiation records, counseling by program faculty and the department radiation safety officer is required in order to identify the source of higher exposure levels, and to provide strategies for prevention in the future.

ALARA LIMIT STANDARDS

The federal regulations, from the Nuclear Regulatory Commission (NRC) are as follows:

- Whole Body (WB)=5000 mrem/yr
- Ring=50000 mrem/yr
- Eye=15000 mrem/yr
- Fetus=500 mrem/gestation (50 mrem/month)

AU ALARA I:

- WB=125 mrem/quarter
- Ring=1250 mrem/quarter
- Eye=375 mrem/quarter

AU ALARA II:

- WB=375 mrem/quarter
- Ring=3750 mrem/quarter
- Eye=1125 mrem/quarter

ALARA Level I Trigger Level	ALARA Level II Trigger Level
W.B. 125 mRem	W.B. 375 mRem
Ring 1250 mRem	Ring 3750 mRem

**Nuclear Medicine Technology Program
Clinical Advisory Committee**

The Clinical Advisory Committee is an essential component of oversight and improvement of the AU NMT program. The Advisory Committee’s purpose is to strengthen the Nuclear Medicine Technology program it serves. The committee exists to advise, assist, support and advocate for NMT education. It provides ongoing clinical expertise to enhance the quality of the program by augmenting the knowledge and skills of the program faculty. The committee is composed of all the Affiliate Education Supervisors from each clinical affiliate site as well as the medical director, program director and both clinical coordinators. The Committee meets a minimum of twice a year. Committee members are required to attend each meeting or send a representative. The following are the clinical sites currently being represented on the committee:

Augusta	Distance
Aiken Regional	Piedmont Athens Regional, Athens
• Routine/ Cardiac	
AUMC	Northside Hospital Gwinnett, Lawrenceville
• Routine/ Cardiac	
• PET	Emory University Hospital, Atlanta
DDEAMC	
• Routine/Cardiac/PET/Nuclear Pharmacy	Grady Memorial Hospital, Atlanta
Doctors	
• Routine/Cardiac	Children's Health care of Atlanta at Egleston
Piedmont Augusta	
• Routine	Northeast Georgia Medical Center, Gainesville
• PET	
• Cardiac	Piedmont Columbus Regional, Columbus
○ CVI	
○ CIE	Houston Healthcare, Warner Robins
VA (Charlie Norwood)	
• Routine/PET/Cardiac	Jubilant Radiopharmacy, Athens
Cardinal Health	
• Nuclear Pharmacy	

Advisory Committee Responsibilities:

- Attend meetings
- Advise the NMT Program
 - Curriculum modifications based on clinical trends or industry standards
 - Provide information on job market conditions that may affect program capacity
 - Advise on Clinical rotation plans

- Assist the clinical instruction by helping the Clinical Coordinator and Program Director
 - Identify and report student issues within the clinical setting
 - Make recommendations to address such findings
 - Provide opportunities for students to participate in value added learning experiences;

PROCEDURE

A minimum of one meeting will be held each year during the fall semesters. Each committee member will be emailed the meeting information along with a form to submit items for discussion. Members will be asked to return the form highlighting any points of discussion or issues that need to be addressed or mark the form “no issues at this time”. Topics and issues will be discussed during the meeting along with possible actions or resolutions for each. The CAC suggestions will be reviewed to see if there are any programmatic responses that may need to be implemented, such as policy and procedures that need to be modified or if a curriculum change is warranted. Upon completion, meeting minutes will be emailed to each member for review and acceptance.



AUGUSTA UNIVERSITY

Clinical Advisory Committee Member Reporting Form

Please list any contributions or concerns or thoughts you would like discussed at the next Clinical Advisory committee meeting along with any points of discussion or suggestions for resolution or improvement.

CLINICAL SITE _____

AFFILIATE EDUCATION SUPERVISOR _____

DATE _____

No issues at this time

TOPIC OF DISCUSSION _____

SUGGESTED ACTION _____

JRCNMT Competency List for Nuclear Medicine Technology Graduates

A. Professionalism

A nuclear medicine technology graduate must:

1. Practice in accordance with ethical standards, legal statutes and published standards of practice.
2. Demonstrate professionalism befitting a health care provider.
3. Collaborate as a member of an interprofessional team.
4. Display respect for diversity.
5. Apply problem-solving, critical-thinking and decision-making strategies.
6. Evaluate published research studies and apply appropriate principles to improve evidence-based practice.

B. Patient Care

A nuclear medicine technology graduate must:

1. Practice universal precautions.
2. Practice aseptic technique.
3. Assess patient status and vital signs.
4. Establish, verify and maintain vascular access.
5. Provide appropriate patient comfort, monitoring, and care before, during and after procedures.
6. Recognize and respond appropriately to unexpected and emergency situations.

C. Radiation Safety

A nuclear medicine technology graduate must:

1. Maintain compliance with institutional radioactive materials license under supervision of an authorized user or radiation safety officer.
2. Maintain compliance with local, state and federal radiation safety regulations.
3. Practice ALARA principles thereby limiting the radiation exposure of the patient, public, fellow workers, and self.
4. Perform and document radiation surveys and when necessary, take appropriate action.
5. Respond appropriately to a radioactive spill.
6. Perform decontamination procedures in accordance with the radiation safety program.
7. Participate in appropriate in-service programs to educate other personnel regarding radiation and principles of radiation protection.
8. Prepare to participate in the management of radiation disasters.

D. Instrumentation and Quality Control

A nuclear medicine technology graduate must:

1. Identify the function and application of the following instruments:
 - a) Dose calibrators
 - b) GM survey meters
 - c) NaI(Tl) counting and/or uptake systems
 - d) Imaging systems including:
 - i. Planar
 - ii. SPECT
 - iii. PET
 - iv. CT component of hybrid imaging
 - v. Fusion on hybrid imaging systems

2. Perform the appropriate quality control for the instruments listed in D1.
3. Document performance and results of all quality control testing according to quality control program procedures.
4. Analyze QC results and take appropriate corrective action(s) when necessary.
5. View, process and archive acquired data on picture archival communicating systems (PACS).
6. Utilize radiology and hospital information systems, managing patient information in these systems according to facility policies, state and federal statutes and accreditation standards.

E. Radiopharmaceuticals and Pharmaceuticals

A nuclear medicine technology graduate must:

1. Procure appropriate radiopharmaceuticals for the day's schedule in accordance with license possession limits.
2. Store radiopharmaceuticals consistent with established safeguards and institutional radiation safety guidelines.
3. Follow Department of Transportation (DOT) and institutional radiation safety guidelines in the transport, receipt and shipment of radioactive materials.
4. Prepare and label applicable radiopharmaceuticals in accordance with institutional protocols.
5. Apply radioactive decay calculations as appropriate to determine required volume and activity.
6. Verify physician order, procedure, time, patient, radiopharmaceutical or adjunctive pharmaceutical, dosage, and route for administration.
7. Apply weight and age-based calculations as appropriate to verify the prescribed dosage of radiopharmaceuticals or pharmaceuticals.
8. Dispense and administer radiopharmaceuticals and/or adjunctive pharmaceuticals under the direction of an authorized user.
9. Document radiopharmaceutical and/or adjunctive pharmaceutical administration in accordance with institutional policies.
10. Follow institutional protocols for blood withdrawal and radioactive labeling.
11. Evaluate patients for contraindications, precautions, physiological response and side effects of radiopharmaceuticals and adjunctive pharmaceuticals.
12. Manage the disposal of radioactive materials.

F. Diagnostic Procedures

A nuclear medicine technology graduate must:

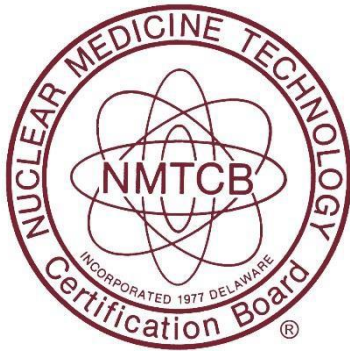
1. Identify indications for performing imaging and physiologic quantitation.
2. Identify the chemical and brand names of the radiopharmaceutical(s) for a specific procedure.
3. Identify the acceptable dose ranges for the radiopharmaceutical(s).
4. Identify the route of administration for the radiopharmaceutical(s).
5. Explain the appropriate methods to administer the radiopharmaceutical(s).
6. Describe the normal bio-distribution of the radiopharmaceutical including route of excretion and organ receiving highest radioactive dose.
7. Schedule a procedure, keeping in mind appropriate sequence when multiple procedures have been ordered.
8. Review and evaluate patient medical history in preparation for the nuclear medicine procedure.
9. Verify the written order for the procedure and evaluate procedure appropriateness.
10. Verify the patient's identity prior to radiopharmaceutical or adjunctive pharmaceutical administration.
11. Identify any contraindications including pregnancy and/or lactation status, prior to the procedure.
12. Verify patient's physiological preparation (e.g. NPO status).
13. Explain the impact of patient preparation on the procedure, imaging and quantitative data.
14. Explain the procedure, patient involvement, length of study and radiation safety to the patient and family

15. Verify informed consent, if appropriate.
16. Select and organize the supplies necessary to perform the procedure.
17. Select appropriate instrument and parameters for the procedure.
18. Administer the radiopharmaceutical and/or adjunctive pharmaceutical in accordance with institutional guidelines.
19. Document the radiopharmaceutical and/or adjunctive pharmaceutical in accordance with institutional guidelines.
20. Position the patient appropriately for the procedure.
21. Assist the healthcare provider in nuclear cardiac stress testing performed in conjunction with nuclear medicine procedures.
22. Acquire appropriate imaging view(s) and/or non imaging data for complete procedure.
23. Annotate and/or process imaging or non imaging data for physician interpretation.
24. Review acquired images and processed data critically in order to assure diagnostic quality.
25. Analyze normal and abnormal bio-distribution of the radiopharmaceutical in nuclear medicine images and correlate with physiology and /or pathology.
26. Recognize image or patient artifacts and take appropriate action.

G. Radionuclide Therapy

A nuclear medicine technology graduate must:

1. Assist an authorized user with the therapy procedure including preparation, documentation, patient care and radiation safety.
2. Identify any contraindications to the therapy including pregnancy and/or lactation status, prior to the procedure.
3. Verify the patient's physiological preparation.
4. Verify completion of informed consent, written directive, radiation safety instructions, and patient and family education.
5. Verify and document patient identity, radiopharmaceutical, route of administration and dosage for the therapy.
6. Assist the authorized user in room preparation, instructing hospital staff, patient and/or caregivers in appropriate patient care and radiation safety precautions.
7. Practice prescribed radiation safety procedures during the preparation and the administration of therapy.
8. Conduct and document radiation surveys of designated patient areas and/or the patient, when indicated.
9. Assure appropriate post therapy monitoring, documentation and follow up is performed



**NUCLEAR MEDICINE
TECHNOLOGY**
CERTIFICATION BOARD

**COMPONENTS OF
PREPAREDNESS:**

https://www.nmtcb.org/documents/resources/NMTCB_COPS_2020.pdf

**COMPUTER ADAPTIVE
TESTING:**

<http://nmtcb.org/exam/cat.php>

SAMPLE EXAM QUESTION:

<http://nmtcb.org/exam/samplequestions.php>



The American Registry of
Radiologic Technologists

NMT TASK INVENTORY LIST:

https://assets-us-01.kc-usercontent.com/406ac8c6-58e8-00b3-e3c1-0c312965deb2/70ed3e2f-23b1-4c10-bfc0-d8ae4d29893b/NMT_TI_2022.pdf

EXAM CONTENT SPECIFICATIONS:

https://assets-us-01.kc-usercontent.com/406ac8c6-58e8-00b3-e3c1-0c312965deb2/b0fe22db-ea4c-4948-a6c5-190abb745851/NMT_CS_2022.pdf

Radiation Laboratory Safety Rules

It is the responsibility of those working with radioactive materials to protect themselves and others from radioactive hazards arising from their work. Poor examples and careless working habits can unnecessarily expose others or contaminate facilities. The following safety rules shall be posted in the laboratory and shall be observed at all times:

- Eating, drinking, smoking, and the application of cosmetics are prohibited in areas that are posted for radioactive materials use.
- Food may only be consumed in areas designated and marked as no-radioactive materials allowed/safe areas.
- To prevent internal radioactive contamination:
 - Food items shall not be stored in areas designated for radioactive materials.
 - Working with radioactive materials, when open wounds are present on exposed surfaces of the body, is prohibited unless wounds are properly dressed and protected.
 - Pipetting or any similar operation by mouth suction is prohibited.
- To prevent external radioactive contamination:
 - Shoes that cover the feet and toes, and pants that cover the legs, are required in the radiation laboratory.
 - Protective gloves and laboratory coats shall be worn when handling contaminated or potentially contaminated items. The use of protective goggles is required when working with non-sealed sources in laboratory.
 - Transporting radioactive materials will be conducted only at the direction of the laboratory PAU (currently Dr. Passmore). Radioactive material transported from the radiopharmacy to the laboratory (or from the laboratory to the radiopharmacy) must be carried in a transport carrier “pig” appropriate to the isotope energy and radiation type. Syringe shields and vial “pigs” will be used at all times when handling radiation sources unless otherwise directed by the PAU.
 - Disposable absorbent pads on table/bench surfaces and remote handling devices shall be utilized when possible.
 - Hands should be washed thoroughly after handling radioactive materials and especially before eating.
- Personnel monitoring dosimetry badges shall be worn in the radiation laboratory areas. Personal dosimetry shall be exchanged on a monthly basis, and acknowledged on the personal dosimetry report as reviewed and exchanged by your signature placed by your name found on the report itself.
- ALARA: Radiation exposure to student technologists is typically minimal. Students will adhere to the ALARA (As Low As Reasonably Achievable) concept and its relationship to laboratory/clinical procedures and conditions.
 - Student technologists will continuously apply the tenets of
 - Time (reduce exposure time),
 - Distance (the farther away from the radiation source the less the exposure), and
 - Shielding (use attenuating material to shield the body from the radiation energy) during their laboratory and clinical experiences.

- Waste Disposal
 - Radioactive waste shall be disposed of only in the containers provided. Nonstandard containers are prohibited.
 - Sharps shall be disposed of in sharps containers only. Radioactive sharps are to be stored in sharps containers designated as radioactive waste sharps containers. Non-radioactive sharps are to be stored in sharps containers designated as non-radioactive sharps containers.
- Stock shipments shall be handled and stored in specially designated locations. Shipments shall be recorded appropriately.
- Good housekeeping shall be maintained at all times.
- Spills should be preventable, but in the event of such an accident, follow the established emergency procedures:
 - If less than 1 mCi (37MBq) –
 - stop work, contain/isolate spill.
 - Notify laboratory PAU and other laboratory personnel and
 - begin appropriate clean up/decontamination as directed.
 - Clean and survey spill area until background levels are achieved, document.
 - Shield area if necessary.
 - Notify RSO.
 - If greater than 1 mCi (37MBq) –
 - stop work, contain/isolate spill.
 - Notify laboratory PAU and other laboratory personnel and
 - begin appropriate clean up/decontamination as directed.
 - Notify RSO and keep potentially contaminated personnel nearby for follow-up.
 - Keep uninvolved personnel out of contaminated area until cleanup is complete.
 - Survey cleanup until background levels are achieved. Quarantine and/or shield spill area if necessary.
 - Post area appropriately.
- Conduct radiation meter and wipe test surveys at the required frequency. Monitor hands and clothing prior to leaving the laboratory. When measurements are abnormal, find the cause and take corrective action.

Additional information can be found at AU - Radiation Safety Manual

<https://www.augusta.edu/services/ehs/radsafe/documents/aursm61623.pdf>

COVID-19 Policy for Health Science Students

A Covid-19 exposure is defined by the University as “Contact with an individual who has tested positive for Covid-19 (or tests positive soon after) for a period of 15 minutes or longer, at a distance of less than six feet and without appropriate PPE”. If a student has an exposure during their clinical rotation, report it to your Affiliate Educational Supervisor, your program clinical coordinator and student health. Follow your clinical sites’ policy for exposure: e.g. monitor your temperature twice a day for 14 days while remaining in clinic and if symptoms occur, remove yourself from clinic and get tested 706-721-1852.

If a student develops symptoms of COVID-19, they must stay home. If they become ill while on campus, they must leave class immediately. Students should report their illness to their professors and are encouraged to contact their medical care provider for guidance and call 706-721-1852 for screening/testing options. Professors will then report suspected and confirmed COVID-19 illness to Environmental Health and Safety at REPORTCOVID@augusta.edu or 706-721-2663.

AU Covid-19 information: <https://www.augusta.edu/reopening/>

CDC’s FAQs for Covid-19: <https://www.cdc.gov/coronavirus/2019-ncov/faq.html#People-at-Higher-Risk-for-Severe-Illness>



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