HCA MIDWEST HEALTH

RESEARCH MEDICAL CENTER

School of Nuclear Medicine Technology

Program Information

Research Medical Center
2316 E. Meyer Blvd.
Kansas City, MO 64132
816-276-9570

2024-2025

This information is published for the faculty, students and prospective students of the Research Medical Center School of Nuclear Medicine Technology. The School reserves the right to make changes in any or all specifications contained in this publication and apply such revisions to present and prospective students alike. This program information is not a contract agreement between the program and the students/applicants.

Updated October 2023

GENERAL INFORMATION ABOUT PROFESSION

NUCLEAR MEDICINE TECHNOLOGY IS ……

The medical specialty that utilizes radioactive and non-radioactive compounds for the diagnosis of functional or anatomical conditions of the body and to provide therapy with radioactive sources. These radioactive compounds localize in specific organs or tissues. The studies provide information that can assist the physician in diagnosing or treating diseases. The patient experiences little or no discomfort and the radiation dose is small.

A NUCLEAR MECICINE TECHNOLOGIST IS……

An allied health professional who, under the direction of a physician, is committed to diagnosing and treating disease through the safe and effective use of radiopharmaceuticals and pharmaceuticals. The technologists place a priority on patient welfare and demonstrate ethical behavior consistent with the practice of the profession. Although nuclear medicine is primarily used for diagnostic purposes (heart disease, gallbladder disease, cancer diagnosis of PET), it is also used for therapies such as the treatment of hyperthyroidism, thyroid cancer or metastatic disease.

The responsibilities of a Nuclear Medicine Technologist include performing radiation safety and quality control procedures, preparing and administering radiopharmaceuticals and pharmaceuticals, operating nuclear medicine instruments, positioning patients for imaging procedures, processing clinical computer data, and preparing data for the physician's interpretation.

DESCRIPTION OF PROGRAM

The School of Nuclear Medicine Technology is a 12-month program with students attending full time, approximately 40 hours per week. The program includes both didactic and clinical instruction. The didactic program includes lectures, informal discussions, presentations, demonstrations, assignments and laboratory projects. The didactic portion of the program provides theoretical background and clinical correlation to the practical experience received in Clinical Practicum. Clinical Practicum portion provides the opportunity to learn and become proficient in performing nuclear medicine procedures while under the supervision of a Nuclear Medicine Technologist clinical instructor.

Students must demonstrate didactic and clinical competency throughout the program. The program is divided into 3 semesters of didactic and clinical studies. The program begins in September of each year. The students will rotate through a variety of clinical sites, which perform general, cardiac, and therapeutic nuclear medicine studies, SPECT/CT, PET/CT, and radiopharmacy.

ADMISSION REQUIREMENTS (HOW TO APPLY)

1. Applicants must be at least 18 years old at the time they reach the training period when they will be working with radionuclides, as well as be a citizen of the United States or hold a US permanent immigration visa.

2. Candidates for admission must satisfy one of the following minimal requirements:
   Bachelor of Science degree, science background preferred
   Certified Radiologic Technologist (ARRT) with a minimum of an Associate degree
   Certified Medical Laboratory Scientist MLS (ASCP)

3. The following post-secondary courses for credit are **required** for admission:
   Human Anatomy and Physiology (two courses, each with a laboratory)

General/College Physics	College Algebra
General Chemistry with lab	Medical Terminology
English Composition	Humanities Course
Oral Communications	Social Science Course

All courses must be at least freshman level college courses for credit and documented on a transcript with a grade of C or better. Science and Algebra courses should have been taken within 10 years of applying for nuclear medicine technology school. If you have questions about a course being accepted by the nuclear medicine program, please contact the program director.

4. The following post-secondary courses are **recommended.**
   Computer Science
   Statistics
   Immunology

5. A cumulative grade point average of 2.5 on a 4.0 scale is required from post-secondary education.

6. A physical exam must be successfully completed within one month prior to the beginning of school.
   A drug screen is included in the physical and drug free results are required for admission.
   Vaccination requirements include but are not limited to: Covid-19, Influenza, Tdap, MMR.

7. The applicant needs to be a citizen of the United States or hold a US permanent immigration visa.

8. A background check is required of all students prior to starting classes, paid by the student.

Technical/Physical Requirements
To accomplish the educational goals of the program, you must have, with or without reasonable accommodation, the following:

1. Mobility sufficient to move about the Nuclear Medicine Department and hospital, including patient rooms;

2. Strength and ability to move and position patients and equipment;

3. Vision sufficient to read and interpret charts, graphs, instrument panels and printouts; discriminate colors and use computers effectively;

4. Hearing and speech sufficient to communicate effectively and efficiently with patients, physicians, coworkers and other members of the health care team;

5. Manual dexterity sufficient to perform delicate and detailed manipulations;

6. Ability to effectively problem solve and react calmly and effectively in stressful situations;

7. Stamina to maintain the 40 hours per week commitment to the program.

Transfer Student Requirements
Students who apply with prior hours/credit from another Nuclear Medicine Technology program will not be granted credit for that experience. If accepted into the Research Medical Center program, they would be required to complete all requirements for graduation at this institution.

APPLICATION PROCESS

Applicants must submit:

- A non-refundable application fee of $40.00 check or money order payable to Research Medical Center
- Completed application
- Personal statement / Essay addressing: "Why do you want to be a Nuclear Medicine Technologist and why at this program?"
- Official transcripts of all postsecondary, college and professional education sent directly from the school.

  Attn: Dylan Shimerda, Program Director
  Research Medical Center, School of Nuclear Medicine Technology
  2316 E. Meyer Blvd.
  Kansas City, MO 64132

  Official transcripts can be emailed from the School directly to
  Dylan.shimerda@researchcollege.edu

- Two professional references are required (academic or work related) submitted on forms provided.
- A copy of current certification in Radiologic Technology, Medical Laboratory Scientist or other as applicable.
- Current resume´

SHADOW EXPERIENCE FOR APPLICANTS
All applicants must complete a mandatory shadow experience in a nuclear medicine department to observe studies and talk with technologists to learn what is expected of persons working in the nuclear medicine profession. Shadowing is recommended at Research Medical Center. Documentation of neg TB, Covid-19 vaccination, and Influenza vaccination is mandatory for all job shadows.

All application materials are due by February 15. Late applications will be considered on a space available basis.

References: You are responsible for contacting and obtaining your references. Academic or work-related references are preferred. Reference forms should be mailed directly to the program office by the person completing your reference.

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Interviews: When all requested information is received, the Admissions Committee will review the application materials in their entirety. If you have met all admission requirements, you will be considered for an interview. Interviews are conducted to evaluate your interpersonal skills, communication skills, level of maturity, and knowledge of the profession.

Reapplication: Applicants who wish to reapply, need to request updated application forms from the school. A new application fee is required.

NON-REFUNDABLE COSTS

Academic Year September 2023 – August 2024 (may be subject to change)

- Costs (Non-refundable)
  - Application fee $40
  - Tuition and fees $6500
    - Total paid to school $6540
    - (Includes attendance at SNMMI national conference)
- Other Costs
  - Uniforms……. $350, approximate cost, provided by student
  - Textbooks……. $600, approximate cost, provided by student
  - Background check… $60, approximate cost, paid directly by student
- Payments: Tuition and fees are due according to the following schedule unless special arrangements are made with Program Director
  - $40 Application fee must be submitted with the application materials, check or money order payable to Research Medical Center.
    - (Refundable if cancelled within 3 working days, excluding Saturday, Sunday and Holidays, after receipt by school)
  - $900 Enrollment Deposit due within 10 days of being offered a position in the program applied to tuition.
    - (Refundable if cancelled within 3 working days, excluding Saturday, Sunday and Holidays, after receipt by school)
  - $2000 tuition due on 1st day of Semester I - Fall Semester
    - (Refundable if cancelled within 3 working days, excluding Saturday, Sunday and Holidays, after receipt by school)
  - $2000 due on 1st day of Semester II - Winter semester
  - $1600 due on 1st day of Semester III - Summer semester

Health Insurance: Students are required to have health insurance and are responsible for obtaining insurance prior to starting the program. Health insurance is not available through Research Medical Center.

Other expenses: Students are responsible for the cost of their health insurance, immunizations, background check, lab coats, uniforms, books and living expenses.

LOAN OPPORTUNITIES

Students may pursue private sources of student loans.
https://www.salliemae.com/student-loans/career-training-smart-option-student-loan/

SCHOLARSHIP OPPORTUNITIES (enrolled students only)

Paul Cole scholarship from the Society of Nuclear Medicine and Molecular Imaging (SNMMI)
https://app.smarterselect.com/programs/61302-Society-Of-Nuclear-Medicine-And-Molecular-Imaging

Research Foundation scholarships https://www.theresearchfoundationkc.org/what-we-do/scholarships/

LENGTH OF PROGRAM: 12 months. Classes begin the first week of September.

SPONSORING INSTITUTION: Research Medical Center, Kansas City, Missouri

CLINICAL AFFILIATES: Truman Medical Center, Menorah Medical Center, St. Luke's Health System - Plaza, Centerpoint Medical Center, and Children's Mercy Hospital. The number and location of clinical affiliates are subject to change.

SCHOOL FACULTY: includes the program director, affiliate education supervisors, nuclear medicine technologists, board-certified physicians, and radiopharmacists.

FAIR PRACTICES
It is Research Medical Center's policy to provide equal opportunity to all applicants without regard to race, color, religion, gender, national origin, sexual orientation, genetic information, gender identity, ancestry, disability, veteran status or age.

The PROGRAM'S MISSION and VALUES
The program's mission is to provide a competency based, quality education in nuclear medicine technology, utilizing all resources available to develop an educational program that promotes excellence in nuclear medicine technology practice and provides a source of qualified nuclear medicine technologists for Research Medical Center, affiliate hospitals, and the health care community.

RESEARCH MEDICAL CENTER'S MISSION

Above all else, we are committed to the care and improvement of human life.
Together, we will be the premier healthcare destination for all we serve.

Rationale to support Research Medical Center's School of Nuclear Medicine Technology

Research Medical Center started the School of Nuclear Medicine Technology in the 1970's. Since then, Research Medical Center, School of Nuclear Medicine Technology has graduated over 150 nuclear medicine technologists. The School has a 100% pass rate and a job placement rate of 100% for the past 5 years. Research Medical Center and the School believe that a School of Nuclear Medicine Technology properly serves the needs of the health care community. Therefore, Research Medical Center provides faculty, curriculum, clinical facilities, administration, and support services for the School. It is felt that a training program provides an added stimulus to the department and staff to continue to provide the most current procedures in the field of nuclear medicine and to maintain a high level of competency among the staff. Therefore, the program is a benefit to the hospitals intrinsically as well as extrinsically and is consistent with the hospitals' goal of providing quality patient care for the community.

CERTIFICATE

After successfully completing the program, the student is issued a Certificate of Completion in Nuclear Medicine Technology by Research Medical Center. Upon graduation the student is eligible to take the national certification board examinations given by the Nuclear Medicine Technology Certification Board (NMTCB) www.nmtcb.org and the American Registry of Radiologic Technologists (ARRT) www.arrt.org.

ACCREDITATION

The School of Nuclear Medicine Technology at Research Medical Center is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) www.jrcnmt.org.

PROGRAM GOALS

Performance of Graduates of Research Medical Center School of Nuclear Medicine Technology
For the five most recent calendar years (2018-2022)

- Graduates indicate they are satisfied with their program 100%
- First time pass rate (NMTCB and ARRT) 100%
- Employment within 6 months of graduation 100%
    - *Full time, part-time and PRN*

REFUND POLICY

If the student cancels the Enrollment Agreement within three working days (excludes Saturday, Sunday and Holidays) of the receipt of the $900 deposit by the program, the $900 Enrollment deposit will be refunded.
The remainder of program tuition will be refunded in accordance with the following schedule:

Time of withdrawal/dismissal	Percent of total tuition refunded
Within the first week of the program	100% minus $200 enrollment deposit
Week two to the end of semester 1	65%
Within semester 2	30%
After the end of semester 2	0%

Students withdrawing from the program must submit a written statement to the Program Director of the School of Nuclear Medicine Technology with their intent to withdraw including the date of withdrawal and a request for a refund.

HOLIDAYS/VACATION

The following holidays are observed by the school: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day (and the following Friday), and Christmas. A break is scheduled around the winter holidays and during the spring.

Students are allowed five days (40 hours) of personal leave per year. This time may be used as time off for illness or other reasons. Time off in excess of five days (40 hours) must be made up before or after scheduled clinical / class time, during the scheduled breaks or at the end of the training period.

GRADING SYSTEM

Clinical and didactic grades: The following grading scale is used for didactic and clinical courses:

Percentage Grade	Letter Grade	Grade points
93.0 – 100.0	A	4.00
92.6 – 92.9	A-	3.66
91.5 – 92.5	B+	3.33
85.0 – 91.4	B	3.00
84.6 – 84.9	B-	2.66
83.5 – 84.5	C+	2.33
77.0 – 83.4	C	2.00
76.6 – 76.9	C-	1.66
75.5 – 76.5	D+	1.33
70.0 – 75.4	D	1.00
69.6 – 69.9	D-	0.66
<69.6	F	0

If the student fails to maintain a 77.0 (C) average in each academic and clinical course, the student will be placed on probation. Students must complete a plan of study agreed upon with the course instructor and program faculty to raise the grade to a 77.0 (C). The student is required to maintain a 77.0 (C) in all courses while on probation. If the grades are not raised to 77.0 (C) within the time specified in the agreed upon plan, the student will be dismissed. If the student fails to maintain a 77.0 (C) in more than one course in the same semester, the student will be dismissed. If the student does not maintain at least a 77.0 in Clinical Practicum I, II, or III the student will be dismissed.

Grades for the didactic portion of the course are determined from exams, quizzes, projects, labs, and homework assignments. More specific information can be obtained from the individual course syllabi which are given to the student at the beginning of each course.

2. Clinical Grades: Clinical grades are determined from Clinical competencies, Student Evaluations, attendance records, evaluation and critique of studies, completion of all assigned projects and clinical objectives as assigned per semester. The student's clinical experiences will be documented at www.trajecsys.com.

NUCLEAR MEDICINE TECHNOLOGY COURSE DESCRIPTIONS

SEMESTER I Fall Semester Courses

Course Number: NM 400
Course Title: FOUNDATIONS IN NUCLEAR MEDICINE
Contact Hours: 124
Instructor: Dylan Shimerda
Teaching Methodologies:
Classroom Instruction
Laboratory Instruction
Review of Nuclear Medicine studies
Course Content:

This is an introductory course providing an overview of the field of nuclear medicine, including nuclear medicine imaging and laboratory procedures, radiation safety, and instrumentation. A general history of nuclear medicine is presented as well as the role and responsibility of the nuclear medicine technologist. Information to facilitate the student's functioning in the hospital setting and nuclear medicine department is provided. This course also includes patient care procedures, basic nursing skills, emergency care, patient's rights, patient-technologist interactions, communication skills, handling of patient information, privacy, ethical and legal considerations and professionalism. Review of research methodologies and article critiques are included in this course.

Completion Requirements:
Minimum of 77% for overall course grade
Grades are based on: written tests (50%), laboratories (40%), homework (10%)

Course Number: NM 441
Course Title: NUCLEAR MEDICINE PHYSICS AND INSTRUMENTATION I
Contact Hours: 40
Instructor: Dylan Shimerda
Teaching Methodologies:
Classroom Instruction
Laboratory Instruction
Course Content:

This course presents the theory and principles of radiation including the properties of radiation, radioactive decay, production of radionuclides, and interaction of radiation with matter and statistical considerations. This course provides the basic principles of radiation detection, the types of instruments, and their uses. The basics of computers are presented. The course is designed to familiarize the student with non-imaging and imaging instrumentation. This includes gas detectors, scintillation detectors, and computers.

Completion Requirements:
Minimum of 77% for overall course grade
Grades are based on: written tests (80%), laboratories (10%), homework (10%)

Course Number: NM 410
Course Title: RADIOPHARMACY
Contact Hours: 40
Instructor: Dylan Shimerda
Teaching Methodologies:
Classroom Instruction
Laboratory Instruction
Course Content:
This course addresses all aspects of radiopharmaceuticals. The unit includes radiopharmaceutical methodologies, preparation of radiopharmaceuticals, methods of localization, dose calculation, record keeping, federal drug regulation, quality control procedures, and uses and characteristics of radiopharmaceuticals.
Completion Requirements:
Minimum of 77% for overall course grade
Grades are based on: written tests (100%)

Course Number: NM 421
Course Title: CLINICAL PROCEDURES I
Contact Hours: 72
Instructor: Dylan Shimerda
Teaching Methodologies:
Classroom Instruction
Laboratory Instruction
Review of Nuclear Medicine films/cases
Course Content:
This course is an in-depth view of routine clinical nuclear medicine procedures. The systems studied during this course include the gastrointestinal system, the cardiovascular system, the respiratory system and the endocrine system. The course includes a review of anatomy and physiology as it relates to nuclear medicine, as well as protocols, procedures, instrumentation, radiopharmaceuticals, study interpretation and pathologies associated with each system. Correlation of studies with other imaging modalities is included for each system.
Completion Requirements:
Minimum of 77% for overall course grade
Grades are based on: written tests (80%), laboratories (10%), homework (10%)

NUCLEAR MEDICINE TECHNOLOGY COURSE DESCRIPTIONS

SEMESTER II Winter Semester Courses

Course Number: NM 442
Course Title: NUCLEAR MEDICINE PHYSICS AND INSTRUMENTATION II
Contact Hours: 32
Instructor: Dylan Shimerda
Teaching Methodologies:
Classroom Instruction
Laboratory Instruction
Course Content:

This course provides the principles of radiation detection, the types of instruments, and their uses. The course is designed to familiarize the student with non-imaging and imaging instrumentation including gas filled detectors, scintillation detectors, PET/CT, x-ray and CT. A detailed description of basic principles, system configuration and performance characteristics of all instrumentation is covered. Data manipulation, fusion imaging, image display and computer processing are also taught. Quality assurance and quality control procedures for all types of equipment are presented.

Completion Requirements:
Minimum of 77% for overall course grade
Grades are based on: written tests (80%), laboratories (10%), homework (10%)

Course Number: NM 450
Course Title: RADIATION SAFETY AND RADIATION BIOLOGY
Contact Hours: 32
Instructor: Dylan Shimerda
Teaching Methodologies:
Classroom Instruction
Laboratory Instruction
Course Content:

This course presents the concepts of radiation protection, regulations, licensing requirements, emergency decontamination techniques, and the proper storage/disposal of radioactive materials. The course also discusses the effects of radiation on the human body. These effects are discussed on a cellular, organ system, and a whole body level. The benefits of radiation vs. the risks are explored. This course presents a rationale for the safe handling and the use of radioactive materials.

Completion Requirements:
Minimum of 77% for overall course grade
Grades are based on: written tests (80%), laboratories (10%), homework (10%)

Course Number: NM 422
Course Title: CLINICAL PROCEDURES II
Contact Hours: 88
Instructor: Dylan Shimerda
Teaching Methodologies:
Classroom Instruction

Laboratory Instruction
Student Projects
Review of Nuclear Medicine films/cases

Course Content:

This unit is an in-depth view of clinical nuclear medicine procedures including the cardiovascular system, skeletal system, lymph, infection and tumor imaging, cross sectional anatomy, and radionuclide therapy. The course includes a review of anatomy and physiology as it relates to nuclear medicine, as well as protocols, procedures, instrumentation, radiopharmaceuticals, study interpretation and pathologies associated with each system. Correlation of studies with other imaging modalities is included for each system.

Completion Requirements:

Minimum of 77% for overall course grade
Grades are based on: written tests and student projects (80%), laboratories (10%), homework (10%)

NUCLEAR MEDICINE TECHNOLOGY COURSE DESCRIPTIONS

SEMESTER III Summer Semester Courses

Course Number: NM 423
Course Title: CLINICAL PROCEDURES III
Contact Hours: 27
Instructor: Dylan Shimerda
Teaching Methodologies:
Classroom Instruction
Laboratory Instruction
Review of Nuclear Medicine films/cases
Course Content:

This unit is an in-depth view of clinical nuclear medicine procedures including the central nervous system, hematopoietic system, and administrative procedures. The course includes a review of anatomy and physiology as it relates to nuclear medicine, as well as protocols, procedures, instrumentation, radiopharmaceuticals, study interpretation and pathologies associated with each system. Correlation of studies with other imaging modalities is included for each system.

Completion Requirements:
Minimum of 77% for overall course grade
Grades are based on: written tests (80%), laboratories (10%), homework (10%)

Course Number: NM 460
Course Title: NUCLEAR MEDICINE TECHNOLOGY SEMINAR
Contact Hours: 72
Instructor: Dylan Shimerda
Teaching Methodologies:
Class Presentations
Overall review of nuclear medicine topics
Student Projects
Course Content:

This course is designed to prepare students to successfully take the boards (NMTCB and/or ARRT) in nuclear medicine technology. Student participation is critical to this course. Preparation of study guides, test questions, and oral class presentations are required. Students also prepare a resume. Students will take mock exams to test their progress and increase their confidence.

Completion Requirements:
Minimum of 77% for overall course grade
Grades are based on: student presentations (50%), resumé preparation (10%), mock board exams (40%)

Course Numbers: NM 431, 432, 433
Course Title: CLINICAL PRACTICUM I, II and III

Contact Hours: Total 1120 hours	
CLINICAL PRACTICUM I	**416 hours**
CLINICAL PRACTICUM II	**416 hours**
CLINICAL PRACTICUM III	**288 hours**

Instructors: Affiliate Education Supervisors and clinical instructors from all clinical affiliate sites, program director and clinical coordinator

Teaching Methodologies:

Laboratory Instruction
Externship
Evaluation and critique sessions

Completion Requirements:

Minimum of 77% for overall course grade

Clinical Practicum grades will be based on the following categories:

- Clinical Competencies
- Student Evaluations
- Attendance and Punctuality
- Projects, presentations or oral exams
- Other Clinical Objectives as assigned by semester

These categories are subject to change and may be weighted differently each semester. Refer to the checklist requirements for each semester to determine specific requirements, weighting, and due dates.

Objectives and/or Competencies:

The student should become familiar with the overall operation and function of the imaging areas. The student will track clinical experiences on www.trajecsys.com. Clinical competencies, Student Evaluations, attendance and punctuality will be documented on www.trajecsys.com.

Completion of Clinical Competencies

In order to demonstrate competency in the clinical setting, students will complete Clinical competencies in over 60 different nuclear medicine procedures. The students may work with any clinical instructor, the Clinical Coordinator or Program Director in completing the competency. Clinical competencies will be performed in the clinical setting on actual patients and equipment at any of the clinical affiliates.

Student Evaluations

Students must develop behaviors and attitudes that reflect the standards of the profession. Therefore, throughout the program the students will be assessed for these behaviors. Examples of evaluated behaviors include: professionalism, communication, cooperation, initiative, decision-making, and radiation protection. Each student will be required to submit a minimum number of Student Evaluations each semester.

Contact Information:

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