NUCLEAR MEDICINE TECHNOLOGY, AS

Program code: NMDT-AS

Location: Gateway

Program Description

The Associate in Science degree program in Nuclear Medicine Technology prepare students for employment as nuclear medicine technologists in hospitals, medical offices, or ambulatory clinics. Upon completion of the program, the student may apply to take the certifying board examinations administered by the American Registry of Radiologic Technology (ARRT(N)) and the Nuclear Medicine Technology Certification Board (NMTCB). The program requires approximately twenty-two (22) months of clinical and academic course work. The curriculum includes appropriate didactic content and ample supervised clinical education to assure sufficient opportunity to achieve all didactic and clinical requirements.

Program Learning Outcomes

1. Students will demonstrate skills in effective oral and written communication
   - Students will demonstrate oral communication skills
   - Students will demonstrate written communication skills
2. Students will demonstrate skills in critical thinking and problem solving in the principles and practices of Nuclear Medicine
   - Students will assess patient requisitions in order to perform proper imaging procedures
   - Students will use critical thinking to overcome clinical challenges
3. Students will demonstrate clinical competence in the practice of Nuclear Medicine
   - Students will apply As Low as Reasonably Achievable (ALARA) principles and practices of radiation protection
   - Students will provide appropriate patient care

The mission of the CT State-Gateway Campus Nuclear Medicine Technology program is to offer high-quality instruction to a diverse population of students in an environment conducive to learning. We respond to the changing academic, occupational, technological, and cultural needs of both students and the community by strengthening our graduates through the inclusion of advanced technology, unique clinical internship experience, and quality patient care.

The major categories of the nuclear medicine technologist's scope of practice include, but are not limited to, the following areas (as defined in the "Scope of Practice for the Nuclear Medicine Technologist 2020", SNMMI Technologist Section: https://www.snmmi.org/AboutSNMMI/CommitteeContent.aspx?ItemNumber=5281**):**

Patient Care: Requires the exercise of judgment to assess and respond to the patient's needs before, during, and following diagnostic imaging and treatment procedures and in patient medication reconciliation. This includes record keeping in accordance with the Health Insurance Portability and Accountability Act (HIPAA).

Instrumentation/Quality Control: Involves the operation of nuclear medicine and PET imaging systems: With or without sealed sources of radioactive materials, x-ray tubes, or MR systems for attenuation correction, transmission imaging, or diagnostic CT or MR (when appropriately trained and/or credentialed).

Quality Control: The evaluation and maintenance of a quality control program for all instrumentation to ensure optimal performance and stability.

Diagnostic Procedures: Requires the utilization of appropriate techniques, radiopharmaceuticals, imaging medications and adjunctive medications as part of a standard protocol to ensure quality diagnostic images and/or laboratory results. Obtains biological samples to perform testing as required for the optimization of patient care and quality of diagnostic procedures.

Therapeutic Procedures: Requires the utilization of appropriate techniques, radiopharmaceuticals, and adjunctive medications as part of a standard protocol to ensure proper treatment of the disease process. Obtains biological samples to perform testing as required for the optimization of patient care.

Adjunctive Medications: Involves the identification, preparation, calculation, documentation, administration, and monitoring of adjunctive medication(s) used during diagnostic imaging, or therapeutic procedures. Imaging Medications: Involves the identification, preparation, calculation, documentation, administration, and monitoring of imaging medication(s) used during diagnostic imaging studies.

Imaging Medications: Involves the identification, preparation, calculation, documentation, administration, and monitoring of imaging medication(s) used during diagnostic imaging studies.

Radiopharmaceuticals: Involves the safe handling and storage of radiopharmaceuticals. This includes, but is not limited to, the procurement, identification, preparation, dose calculation, and administration of radiopharmaceuticals. It involves the safe handling and storage of radiopharmaceuticals. This includes, but is not limited to, the procurement, identification, preparation, dose calculation, and administration of radiopharmaceuticals. It also includes all associated documentation and disposal as appropriate.

Radiation Safety: Involves practicing techniques that will minimize radiation exposure to the patient, health care personnel, and general public. These include using protective devices, shields, dose reduction, and monitors consistent with ALARA principles. Establishing protocols for managing spills and unplanned releases of radiation.

Graduation Criteria

All program students must complete the following to receive an associate degree from the program. See the student handbook for complete details.

- Complete all didactic curricula with a final grade of C or better.
- Complete all clinical curricula with a final grade of C or better.
- Complete all competency exams with a final grade of 100%.
- Maintain all hospital and program standards as outlined in the program handbook.

Graduates of the program are eligible to take the Nuclear Medicine Technology Certification Board (NMTCB) American Registry of Radiologic Technologists, Nuclear Medicine Examination ARRT(N).

Clinical Experience will take place at:

- Yale-New Haven Hospital (New Haven)
- Yale University PET Center (New Haven)
- The Veterans Affairs Connecticut Health Care System (West Haven)
- Middlesex Hospital (Middletown)
- Griffin Hospital (Derby)
- Cardinal Health Nuclear Pharmacy Services (East Hartford)
- Midstate Medical Center (Meriden)
- Bridgeport Hospital (Milford Campus)
- William W. Backus Hospital (Norwich)
- Lawrence & Memorial Hospital (New London)
- Stamford Hospital (Stamford)
- Greenwich Hospital (Greenwich)
- UCONN Medical Center (Farmington)
- Hospital of Central Connecticut (New Britain)
- Waterbury Hospital (Waterbury)
    - Simulated labs are held in the Nuclear Medicine lab at the Gateway campus and are scheduled on lecture days.

Note: Students are responsible for their own transportation to and from class and clinical assignments. Due to standards from The Joint Commission, students are advised that the healthcare facilities to which they are assigned for clinical rotations may require that they submit a criminal background check, required immunization records and other documentation needed to meet the standards. CT State Community College cannot be responsible for finding an alternate clinical placement for a student who fails to meet the required hospital requirements. A student who is unable to complete the required clinical experience will be unable to complete the requirements for the associate degree in Nuclear Medicine but may be able to apply some or all the credits completed to an associate degree in General Studies. Students are advised to meet with a Counselor to discuss degree completion requirements.

Clinical Curriculum

The structure of the curriculum is such that courses are offered in sequence and progress in complexity. It offers appropriate didactic content and ample supervised clinical education to assure sufficient opportunity to achieve all didactic and clinical requirements established by the Nuclear Medicine Technology Certification Board (NMTCB) and the American Registry of Radiologic Technologist (ARRT.)

Admissions Procedure

1. All students must first apply to CT State College.
2. Unless waived, all applicants must take placement tests in reading, English, and mathematics.
3. Attendance at one program specific information session.
4. Students must have a 2.7 GPA.
5. Complete the following prerequisite courses
    a. ENG 1010 Composition (C or higher)
    b. BIO 2111 Anatomy and Physiology I (C or higher taken within past five years of program start date)
    c. BIO 2112 Anatomy and Physiology II (C or higher taken within past five years of program start date)
    d. MATH 1600 College Algebra (C or higher taken within five years of program start date)
6. Submit official copies of all transcripts.

Detailed information regarding selective admission events and deadlines is available on the program's Selective Admissions Webpage. (https://ctstate.edu/academics/programs/nuclear-medicine)

Students in this program are responsible for expenses including but not limited to uniforms, physical examinations and blood work, travel to clinical sites, parking, meals, CPR training, background check and toxicology screening, dosimeters, textbooks, liability insurance, Trajecsys and CastleBranch. Specific information about these costs is available on the Nuclear Medicine webpage and in the Nuclear Medicine Program Student Handbook. Financial aid information is available through the College Financial Aid office.

Students will be charged the Supplemental Course (program) Fee Level 1 every fall and spring semesters while in the program.

Program Accreditation:

- The Nuclear Medicine Technology Program is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT). The accreditation is currently under the home of Gateway Community College as we transition to the new structure of CT State Community College Gateway Campus. Additional information regarding accreditation can be found on the JRCNMT website (www.jrcnmt.org (https://www.jrcnmt.org)).

National Exams:

- Nuclear Medicine Technology Certification Board (NMTCB)
- American Registry of Radiologic Technologists (ARRT)(N)

Degree Requirements

Code	Title	Credits
General Education Courses		
ENG 1010	Composition (pre-admission requirement)	3
MATH 1600	College Algebra (pre-admission requirement)	3
Elective ARHX - Arts & Humanities Course		3-4
CHEM 1110	Concepts of Chemistry	4
PSY 1011	General Psychology I	3
ENG 1020	Composition II and Literature	3
CCS 1001	College and Career Success	3
Program Courses		
RST 1000	Introduction to Patient Care for Radiologic Sciences	2
RST 1000L	Introduction to Patient Care for Radiologic Sciences Lab	1
NMED 1001	Introduction to Nuclear Medicine	3
NMED 1002	Nuclear Medicine Procedures I	3
PHYS 1101	Physics for Life Sciences	4
NMED 1194	Clinical Practicum I	1
NMED 1294	Clinical Practicum II	1
NMED 1195	Clinical Internship I	0.5
NMED 1221	Physics in Nuclear Medicine	3
NMED 1295	Clinical Internship II	3
RST 2000	Cross Sectional Anatomy	3
NMED 2002	Nuclear Medicine Procedures II	3

NMED 2004	Nuclear Medicine Instrumentation	3
NMED 2003	Radio Pharmacy	3
NMED 2394	Clinical Practicum III	2
NMED 2494	Clinical Practicum IV	2
NMED 2395	Clinical Internship III	0.5
NMED 2102	Nuclear Medicine Procedures III	3
NMED 2095	Nuclear Medicine Seminar	3
NMED 2010	Introduction to Computers and Nuclear Medicine Applications	3
BIO 2111	Anatomy and Physiology I (pre-admission requirement)	4
BIO 2112	Anatomy and Physiology II (pre-admission requirement)	4
Total Credits		**77-78**