

# Nuclear Medicine Technology, BS

Undergraduate study in nuclear medicine technology is guided by the academic rules and procedures outlined under Undergraduate Rules and Procedures in the Carver College of Medicine section of the catalog.

Programs designed to lead to professional licensure are subject to federal regulations regarding informational disclosures. Please see Professional Licensure Disclosures by Program for further information.

## Requirements

The Bachelor of Science in nuclear medicine technology requires a minimum of 120 s.h. Work for the degree includes a set of courses that are prerequisite to entering the major, 60 s.h. of coursework in the major, and elective coursework sufficient to complete the minimum of 120 s.h. required for graduation. Registered nuclear medicine technologists interested in earning a Bachelor of Science degree by distance education should see the Radiation Sciences RT to BS (Online) section of the catalog.

Students who have declared a nuclear medicine technology interest but have not yet applied and been accepted to a professional program are advised by the University of Iowa Academic Advising Center. After they have been accepted to a professional program, they are advised by the Radiation Sciences Office of Student Affairs.

Upon successful completion of the professional program, students earn a bachelor's degree and are eligible to apply for the nuclear medicine technology national certification examinations.

The Bachelor of Science in nuclear medicine technology requires the following coursework.

## Prerequisites to the Nuclear Medicine Technology Major

Students must complete a total of 60 s.h. of college coursework, including the following prerequisite courses, by the end of the spring semester before they enter the program and the major. Additionally, students must have earned an overall cumulative grade-point average (GPA) of at least 2.50, a UI GPA of at least 2.00, and at least a 2.00 term GPA in the spring semester immediately preceding the start of the nuclear medicine program.

Students are advised for success based on academic strength, not necessarily for a four-year plan. Therefore, prerequisites may take more than two years to complete.

Course #	Title	Hours
<b>Rhetoric</b>		
RHET:1030	Rhetoric: Writing and Communication	4-5

<b>Chemistry With Laboratory</b>		
CHEM:1110	Principles of Chemistry I	4

<b>Anatomy With Laboratory</b>		
One of these:		

HHP:2100 & HHP:2110	Human Anatomy and Human Anatomy Laboratory	4
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HHP:3115	Anatomy for Human Physiology With Lab	5
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### Physiology With Laboratory

One of these:

HHP:2400 & HHP:2410	Fundamentals of Human Physiology and Human Physiology Laboratory	4
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HHP:3500 & HHP:2410	Human Physiology and Human Physiology Laboratory	4
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HHP:3550	Human Physiology With Laboratory	5
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### Physics

One of these:

PHYS:1400	Basic Physics	3-4
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PHYS:1511	College Physics I	4
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### Psychology

PSY:1001	Elementary Psychology	3
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### Mathematics

One of these:

MATH:1020	Elementary Functions	4
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MATH:1440	Mathematics for the Biological Sciences	4
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A more advanced mathematics course

### Medical Terminology

CLSA:3750	Medical and Technical Terminology	2
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## Culture, Society, and the Arts

Students complete two courses for 3 s.h. each in two of these areas (total of 6 s.h.).

- Understanding Cultural Perspectives
- Historical Perspectives
- International and Global Issues
- Literary, Visual, and Performing Arts
- Values and Society

See GE CLAS Core (College of Liberal Arts and Sciences) in the catalog for approved courses in the areas listed.

## Coursework in the Major

Students admitted to the nuclear medicine technology major spend two years in a clinical curriculum that is organized in accordance with the Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) Accreditation Standards for Nuclear Medicine Technologist Education. They complete coursework in the following areas: radiopharmacy, radiation safety and radiobiology, patient care, nuclear medicine and positron emission tomography (PET) procedures, radiation physics and instrumentation, quality management, healthcare administration, medical and professional ethics, research methodology, emotional intelligence, magnetic resonance imaging (MRI), and computed tomography (CT). Practical clinical rotations focus on nuclear medicine, PET and CT imaging, nuclear medicine therapy, clinical radiopharmacy, nuclear medicine computer applications, and quantification of radioactivity in vivo and in vitro.

Students must earn a grade of C or higher in each course required for the major.

Course #	Title	Hours
RSNM:3120	Nuclear Medicine and PET Clinical Procedures I	3
RSNM:3121	Nuclear Medicine Technology Clinical Internship I	3
RSNM:3131	Radiopharmaceuticals	3
RSNM:3132	Radiation Safety and Regulations in Nuclear Medicine	1
RSNM:3140	Foundations in Nuclear Medicine and PET	1
RSNM:3220	Nuclear Medicine and PET Clinical Procedures II	3
RSNM:3221	Nuclear Medicine Technology Clinical Internship II	3
RSNM:3231	Nuclear Medicine Instrumentation	3
RSNM:3320	Foundations in Nuclear Medicine Instrumentation	2
RSNM:3321	Nuclear Medicine Technology Clinical Internship III	4
RSNM:4121	Nuclear Medicine Technology Clinical Internship IV	4
RSNM:4221	Nuclear Medicine Technology Clinical Internship V	5
RSNM:4222	Nuclear Medicine Technology Capstone and Certification Exam Preparation	5
RSCT:4100	Sectional Anatomy for Imaging Sciences	3
RSCT:4130	Computed Tomography Physical Principles and QC	4
RSP:2120	Patient Care for the Radiation Sciences	3
RSP:3130	Introduction to Radiation Safety and Radiobiology	1
RSP:3210	Medical Ethics and Law	2
RSP:3220	Radiation Sciences Quality Management and Health Care Administration	2
RSP:4110	Research Methodology for Radiation Sciences	3
RSRT:3220	Emotional Intelligence for the Health Care Professional	2
<b>Total Hours</b>		<b>60</b>

## Recommended Pre-Major Courses

The Nuclear Medicine Technology Program recommends that before students submit an application to the program and the major, they job-shadow a professional who works in nuclear medicine and positron emission tomography (PET) and gain hands-on patient care experience.

The following courses are recommended prior to the Nuclear Medicine Technology Program application.

Course #	Title	Hours
All of these:		
CHEM:1120	Principles of Chemistry II	4
PSY:1010	Your Brain Unlocked: Learning About Learning	1
RSP:1100	Introduction to the Radiation Sciences	1
STAT:1020	Elementary Statistics and Inference	3
One of these:		
BIOL:1140	Human Biology: Nonmajors	4
HHP:1400	Human Anatomy and Physiology	3
One of these:		
BAIS:1500	Business Technology and Artificial Intelligence	2
CS:1020	Principles of Computing	3

## Admission

Admission to the nuclear medicine technology major is competitive and selective; acceptance into the major is not guaranteed. Students who wish to enter the major must first be admitted to the University of Iowa as College of Liberal Arts and Sciences (CLAS) students with a nuclear medicine technology interest.

As CLAS students, there are two application options for the nuclear medicine technology professional program. Early acceptance is an option for students who will have at least 30 s.h. and half of the prerequisite courses completed by the end of the spring semester of the year in which they are applying. Standard acceptance is an option for students who will have all of the prerequisite courses, including 60 s.h., completed by the end of the spring semester of the year in which they are applying. Students must apply to the nuclear medicine technology professional program by Jan. 15. Standard acceptance applications will be considered for the upcoming fall; early acceptance applications will be considered for the following fall. See Apply on the Radiation Sciences Program website. Transfer students are encouraged to apply in early November to allow time for transfer course articulation.

Applicants for admission to the University of Iowa whose first language is not English are strongly encouraged to complete the University of Iowa English Proficiency Evaluation and satisfy the university's English Proficiency Requirements before they apply to a professional program. Students must have permission to register for a full academic load before they may be admitted to a radiation sciences professional program.

The nuclear medicine technology major requires students to complete a minimum of two years of a high school world language prior to admission.

For additional information on UI admission requirements, contact University of Iowa Admissions.

## Career Advancement

The majority of nuclear medicine technology graduates are employed upon graduation. Graduates typically work as nuclear medicine technologists, beginning as entry-level staff

at hospitals or clinics. Most radiation sciences professionals with full-time jobs work 40 hours a week and may have holiday, weekend, evening, night, and on-call hours.

With experience, and sometimes additional education, they may find related jobs in management, sales, education, or as application specialists. Some students choose to continue their education in a master's, physician assistant, or other related medical program. Those pursuing government-related jobs might find positions as regulatory agency inspectors or radiation safety officers.

Students who complete Iowa's professional radiation sciences programs are eligible to apply for national certification exams administered by the appropriate agency in order to practice. Licensure laws for nuclear medicine technologists vary from state to state. Iowa is a licensing state, requiring nuclear medicine technologists to have a permit to practice. Passing the national exam is a criterion used to issue a permit to practice.

More information on radiation sciences careers and outcomes may be found on the Radiation Sciences Program website. The Pomerantz Career Center offers multiple resources to help students find jobs.

## Academic Plans

### Sample Plan of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

### Nuclear Medicine Technology, BS

Course	Title	Hours
<b>Academic Career</b>		
<b>Any Semester</b>		
Students apply to the Nuclear Medicine Technology BS program through a selective process. Acceptance is not guaranteed. <sup>a</sup>		
Students must earn a grade of C or higher in all RS** courses.		
The Nuclear Medicine Technology professional program is two years in duration.		
<b>Hours</b>		<b>0</b>
<b>First Year</b>		
<b>Any Semester</b>		
Recommended: job shadowing a professional who works in nuclear medicine and positron emission tomography (PET) and hands-on patient care experience.		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
RSP:1100	Introduction to the Radiation Sciences <sup>b</sup>	1
BIOL:1140 or HHP:1400	Human Biology: Nonmajors <sup>c</sup> or Human Anatomy and Physiology	3 - 4
PSY:1001	Elementary Psychology	3
RHET:1030	Rhetoric: Writing and Communication	4
GE: General Education course (HP, IGI, LVPA, UCP or VS) <sup>d</sup>		3

Admission Application: students may be eligible to apply for early acceptance (due January 15)<sup>e</sup>

<b>Hours</b>		<b>14-15</b>
<b>Spring</b>		
CLSA:3750	Medical and Technical Terminology	2
Anatomy with Laboratory course <sup>f</sup>		4 - 5
MATH:1020 or MATH:1440	Elementary Functions <sup>g</sup> or Mathematics for the Biological Sciences	4
GE: General Education course (HP, IGI, LVPA, UCP or VS) <sup>d</sup>		3
Elective course		3
<b>Hours</b>		<b>16-17</b>
<b>Second Year</b>		
<b>Fall</b>		
CHEM:1110	Principles of Chemistry I <sup>h</sup>	4
CS:1020 or BAIS:1500	Principles of Computing <sup>b</sup> or Business Technology and Artificial Intelligence	2 - 3
PHYS:1511 or PHYS:1400	College Physics I or Basic Physics	3 - 4
PSY:1010	Your Brain Unlocked: Learning About Learning <sup>b</sup>	1
Elective course		3
Elective course		2
Admission Application: begin preparing materials for the Nuclear Medicine Technology professional program application (due January 15) <sup>e</sup>		
<b>Hours</b>		<b>15-17</b>
<b>Spring</b>		
CHEM:1120	Principles of Chemistry II <sup>b</sup>	4
Physiology with Laboratory course <sup>i</sup>		4 - 5
STAT:1020	Elementary Statistics and Inference <sup>b</sup>	3
Elective course		3
Elective course		2
<b>Hours</b>		<b>16-17</b>
<b>Third Year</b>		
<b>Any Semester</b>		
The curriculum shown in the third and fourth years on this plan begins upon acceptance into the Carver College of Medicine Nuclear Medicine Technology professional program.		
<b>Hours</b>		<b>0</b>
<b>Fall</b>		
RSCT:4100	Sectional Anatomy for Imaging Sciences	3
RSNM:3120	Nuclear Medicine and PET Clinical Procedures I	3
RSNM:3121	Nuclear Medicine Technology Clinical Internship I	3
RSNM:3132	Radiation Safety and Regulations in Nuclear Medicine	1
RSNM:3140	Foundations in Nuclear Medicine and PET	1
RSP:2120	Patient Care for the Radiation Sciences	3
RSP:3130	Introduction to Radiation Safety and Radiobiology	1
<b>Hours</b>		<b>15</b>

**Spring**

RSNM:3220	Nuclear Medicine and PET Clinical Procedures II	3
RSNM:3221	Nuclear Medicine Technology Clinical Internship II	3
RSNM:3131	Radiopharmaceuticals	3
RSP:3210	Medical Ethics and Law	2
RSRT:3220	Emotional Intelligence for the Health Care Professional	2
<b>Hours</b>		<b>13</b>

**Summer**

RSNM:3320	Foundations in Nuclear Medicine Instrumentation	2
RSNM:3321	Nuclear Medicine Technology Clinical Internship III	4
<b>Hours</b>		<b>6</b>

**Fourth Year****Fall**

RSCT:4130	Computed Tomography Physical Principles and QC	4
RSNM:3231	Nuclear Medicine Instrumentation	3
RSNM:4121	Nuclear Medicine Technology Clinical Internship IV	4
RSP:4110	Research Methodology for Radiation Sciences	3
<b>Hours</b>		<b>14</b>

**Spring**

RSNM:4221	Nuclear Medicine Technology Clinical Internship V	5
RSNM:4222	Nuclear Medicine Technology Capstone and Certification Exam Preparation	5
RSP:3220	Radiation Sciences Quality Management and Health Care Administration	2

Exam: Upon completion of the program students are eligible to apply to take certification exams.

Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) <sup>j</sup>

<b>Hours</b>		<b>12</b>
<b>Total Hours</b>		<b>121-126</b>

i Choose from HHP:3550, HHP:2400 and HHP:2410, or HHP:3500 and HHP:2410.

j Please see Academic Calendar, on Office of the Registrar website, for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor or Degree Services.

- a The Academic Advising Center advises Nuclear Medicine Technology Interest students on prerequisite course planning. Students are advised for success, based on academic strength, not necessarily for a four year plan. Prerequisites may take more than two years to complete.
- b This course is recommended not required.
- c One of these courses is strongly recommended to prepare for the anatomy and physiology courses.
- d Students must complete 6 s.h. by taking 3 s.h. courses from two of the following areas: Historical Perspectives, International and Global Issues, Literary, Visual, and Performing Arts, Understanding Cultural Perspectives, or Values and Society.
- e See the Radiation Sciences website and your academic advisor for detailed application instructions and deadlines.
- f Choose either HHP:3115, or HHP:2100 and HHP:2110.
- g Enrollment in math courses requires completion of a placement exam.
- h Enrollment in chemistry courses requires completion of a placement exam.