

CLINICAL RADIATION SCIENCES, BACHELOR OF SCIENCE (B.S.) WITH A CONCENTRATION IN NUCLEAR MEDICINE TECHNOLOGY

The department offers a Bachelor of Science in Clinical Radiation Sciences with the following areas of concentration: diagnostic medical sonography, nuclear medicine technology, radiation therapy and radiography. Upon meeting prerequisites and gaining admission to the program, students complete a three-year, full-time program that includes general education and professional course work. Graduates of the program are eligible for national certification examinations in their respective area of concentration.

Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the nuclear medicine technology concentration also are eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board. Graduates of the diagnostic medical sonography concentration are also eligible for the certification examination administered by the American Registry for Diagnostic Medical Sonography.

Student learning outcomes

Upon completing this program, students will know and know how to do the following:

Program core learning outcomes

- Demonstrate proficiency in performing imaging/therapy procedures
- Demonstrate proper patient care skills
- Practice appropriate methods of patient safety (to include radiation safety as appropriate)
- Demonstrate effective verbal and written communication
- Demonstrate the ability to critically think and problem solve
- Demonstrate professional and ethical behavior

Nuclear medicine concentration-specific outcomes

- Demonstrate proficiency in performing nuclear medicine procedures
- Demonstrate proficiency in the handling and administration of radiopharmaceuticals

Special requirements

Students may see prerequisite course work for admission to this program on the pre-health major in clinical radiation sciences (<https://bulletin.vcu.edu/undergraduate/college-humanities-sciences/prehealth-majors/clinical-radiation-sciences/>) page elsewhere in this Bulletin.

English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

Course	Title	Hours
CLRS 208	Foundations of Patient Care	4
CLRS 232	Radiation Safety	2
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 321	Nuclear Medicine Physics and Instrumentation I	2
CLRS 322	Nuclear Medicine Physics and Instrumentation II	3
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2-5
CLRS 394	Clinical Education II	2-4
CLRS 395	Clinical Education III	2-6
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 461	Radiopharmaceutical: Preparation and Quality Control	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV	1-5
CLRS 494	Clinical Education V	1-5
CLRS 321	Nuclear Medicine Physics and Instrumentation Laboratory I	1
CLRS 322	Nuclear Medicine Physics and Instrumentation Laboratory II	1

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology

Course	Title	Hours
General education (https://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/)		
Select 30 credits of general education courses in consultation with an adviser. ¹		30
Major requirements		
• Major core requirements		
CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 498	Senior Project	2
• Additional major requirements		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology II	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
CLRS 232	Radiation Safety	2
CLRS 303	Orientation to Nuclear Medicine	2

CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II	4
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2
CLRS 394	Clinical Education II	2
CLRS 395	Clinical Education III	3
CLRS 407	Introduction to PET/CT	2
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV	3
CLRS 494	Clinical Education V	3
Ancillary requirements		
Additional subjects and credits required for admission ²		29
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
Total Hours		120

1

Some course work completed toward admission will also fulfill general education requirements. Admission to the program requires 29 credits.

2

See program page for pre-health major in clinical radiation sciences for a complete list of prerequisite requirements.

The minimum number of credit hours required for this degree is 120.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Freshman year		
Fall semester		Hours
Courses taken toward admission to program		15
Term Hours:		15
Spring semester		
Courses taken toward admission to program		14
Term Hours:		14
Sophomore year		
Fall semester		
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I (both satisfy general education BOK for natural sciences and AOI for scientific and logical reasoning)	4
CLRS 203	Pathophysiology I	3
CLRS 205	Exploring Radiologic Sciences	1
CLRS 208	Foundations of Patient Care	4
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
Term Hours:		16
Spring semester		
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4
CLRS 204	Pathophysiology II	3
CLRS 232	Radiation Safety	2
STAT 210	Basic Practice of Statistics	3
UNIV 200	Advanced Focused Inquiry: Literacies, Research and Communication (satisfies general education UNIV foundations)	3
Term Hours:		15
Summer semester		
CLRS 303	Orientation to Nuclear Medicine	2
Term Hours:		2
Junior year		
Fall semester		
ALHP 430	Overview of Research in the Health Professions	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2
Term Hours:		15
Spring semester		
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II	4
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1

General education course		3
Term Hours:		12
Summer semester		
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 395	Clinical Education III	3
Term Hours:		6
Senior year		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
Term Hours:		13
Spring semester		
CLRS 407	Introduction to PET/CT	2
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Term Hours:		12
Total Hours:		120

The minimum number of credit hours required for this degree is 120.