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

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

Radiography concentration-specific outcome
- Demonstrate proficiency in performing radiographic procedures

Special requirements
Students may see prerequisite course work for admission to this program on the pre-health major in clinical radiation sciences (http://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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLRS 201</td>
<td>Radiographic Imaging and Exposure I</td>
<td>3</td>
</tr>
<tr>
<td>CLRS 208</td>
<td>Foundations of Patient Care</td>
<td>4</td>
</tr>
</tbody>
</table>

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

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<thead>
<tr>
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<tbody>
<tr>
<td>CLRS 211</td>
<td>Radiographic Procedures I</td>
<td>4</td>
</tr>
<tr>
<td>CLRS 212</td>
<td>Radiographic Procedures II</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 232</td>
<td>Radiation Safety</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 294</td>
<td>Introduction to Clinical Education I</td>
<td>0.5</td>
</tr>
<tr>
<td>CLRS 295</td>
<td>Introduction to Clinical Education II</td>
<td>1</td>
</tr>
<tr>
<td>CLRS 312</td>
<td>Radiographic Procedures III</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 320</td>
<td>Radiographic Imaging and Exposure II</td>
<td>3</td>
</tr>
<tr>
<td>CLRS 331</td>
<td>Radiographic Imaging Equipment</td>
<td>3</td>
</tr>
<tr>
<td>CLRS 341</td>
<td>Radiation Physics</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 393</td>
<td>Clinical Education I</td>
<td>2.5</td>
</tr>
<tr>
<td>CLRS 394</td>
<td>Clinical Education II</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 395</td>
<td>Clinical Education III</td>
<td>3</td>
</tr>
<tr>
<td>CLRS 430</td>
<td>Radiobiology</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 488</td>
<td>Senior Seminar</td>
<td>3</td>
</tr>
<tr>
<td>CLRS 493</td>
<td>Clinical Education IV</td>
<td>3</td>
</tr>
<tr>
<td>CLRS 494</td>
<td>Clinical Education V</td>
<td>3</td>
</tr>
<tr>
<td>CLRZ 201</td>
<td>Radiographic Imagng &amp; Exp I Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

General education (http://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/)
Select 30 credits of general education courses in consultation with an adviser. ¹

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 201 & CLRZ 201 | Radiographic Imaging and Exposure I & Radiographic Imaging & Exp I Lab | 4 |
  - CLRS 203  | Pathophysiology I          | 3     |
  - CLRS 204  | Pathophysiology II         | 3     |
  - CLRS 205  | Exploring Radiologic Sciences | 1  |
  - CLRS 208  | Foundations of Patient Care | 4     |
  - CLRS 211  | Radiographic Procedures I   | 4     |
  - CLRS 212  | Radiographic Procedures II  | 2     |
  - CLRS 232  | Radiation Safety            | 2     |
  - CLRS 294  | Introduction to Clinical Education | 0.5 |
  - CLRS 295  | Introduction to Clinical Education II | 1 |
  - CLRS 312  | Radiographic Procedures III | 2     |
  - CLRS 320  | Radiographic Imaging and Exposure II | 3 |
  - CLRS 331  | Radiographic Imaging Equipment | 3 |
  - CLRS 332  | Radiographic Pathology      | 3     |
  - CLRS 341  | Radiation Physics           | 2     |
  - CLRS 393  | Clinical Education I        | 2.5   |
  - CLRS 394  | Clinical Education II       | 2     |

¹ Select 30 credits of general education courses in consultation with an adviser.
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography

CLRS 395  Clinical Education III  3
CLRS 408  Introduction to Computed Tomography (CT)  2
CLRS 430  Radiobiology  2
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
HCMG 300  Health Care Organization and Services  3
HPEX 250  Medical Terminology  1
STAT 210  Basic Practice of Statistics  3
Electives (300 level or higher)  6
Open electives
Select any course  2
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
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
CLRS 203  Pathophysiology I  3
CLRS 205  Exploring Radiologic Sciences  1
CLRS 208  Foundations of Patient Care  4
HPEX 250  Medical Terminology  1
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

Spring semester
CLRS 201  Radiographic Imaging and Exposure I  4
& CLRS 201  Radiographic Imaging & Exp I Lab
CLRS 204  Pathophysiology II  3
CLRS 211  Radiographic Procedures I  4

CLRS 232  Radiation Safety  2
CLRS 294  Introduction to Clinical Education I  .5

Term Hours:  13.5

Summer semester
CLRS 212  Radiographic Procedures II  2
CLRS 295  Introduction to Clinical Education II  1

Term Hours:  3

Junior year
Fall semester
ALHP 430  Overview of Research in the Health Professions  3
CLRS 206  Cross-sectional Anatomy  2
CLRS 312  Radiographic Procedures III  2
CLRS 320  Radiographic Imaging and Exposure II  3
CLRS 341  Radiation Physics  2
CLRS 393  Clinical Education I  2.5

Term Hours:  14.5

Spring semester
CLRS 331  Radiographic Imaging Equipment  3
CLRS 332  Radiographic Pathology  3
CLRS 394  Clinical Education II  2
CLRS 398  Introduction to Research  1
General education course  4
Term Hours:  13

Summer semester
CLRS 395  Clinical Education III  3

Term Hours:  3

Senior year
Fall semester
CLRS 408  Introduction to Computed Tomography (CT)  2
CLRS 493  Clinical Education IV  3
CLRS 498  Senior Project  2
HCMG 300  Health Care Organization and Services  3
General education course  3
Open elective  2

Term Hours:  15

Spring semester
CLRS 430  Radiobiology  2
CLRS 488  Senior Seminar  3
CLRS 494  Clinical Education V  3
Electives (300 level or higher)  6

Term Hours:  14

Total Hours:  120

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