Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality)

The department offers second modality B.S. degree concentrations for American Registry of Radiologic Technologists-certified radiographers who desire to continue their professional education and concentrate in radiation therapy, nuclear medicine technology or diagnostic medical sonography. Upon meeting admission prerequisites, students complete a five-semester, full-time course of study including didactic, laboratory and clinical education. Graduates are eligible for additional national professional certification examinations.

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

Radiation therapy concentration-specific outcomes
- Demonstrate proficiency in delivering radiation therapy treatments
- Demonstrate proficiency at conduction simulation skills

Special requirements
Prerequisites
Course Title Hours
ARRT certification (or eligibility) in radiography 1
Humanities course 3
English composition course 3
Social science course 3
Natural/physical science course 3

1 Must be ARRT certified in radiography within two semesters of enrollment.

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:

Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality)

Course Title Hours
CLRS 305 Orientation to Radiation Therapy
CLRS 309 Oncologic Patient Care
CLRS 314 Pathology and Treatment Principles I
CLRS 323 Radiation Therapy, Techniques and Applications
CLRS 342 Physics for Radiation Therapy
CLRS 393 Clinical Education I
CLRS 394 Clinical Education II
CLRS 395 Clinical Education III
CLRS 415 Pathology and Treatment Principles II
CLRS 430 Radiobiology
CLRS 455 Quality Management in Radiation Therapy
CLRS 493 Clinical Education IV
CLRS 494 Clinical Education V

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 305 Orientation to Radiation Therapy 2
CLRS 309 Oncologic Patient Care 2
CLRS 314 Pathology and Treatment Principles I 4
CLRS 323 Radiation Therapy, Techniques and Applications 4
CLRS 342 Physics for Radiation Therapy 3
CLRS 393 Clinical Education I 2 2
CLRS 394 Clinical Education II 2 2
CLRS 395 Clinical Education III 2 3
CLRS 408 Introduction to Computed Tomography (CT) 2
CLRS 412 Radiation Therapy Treatment Planning 3
CLRS 415 Pathology and Treatment Principles II 4
CLRS 430 Radiobiology 2
CLRS 455 Quality Management in Radiation Therapy 2
CLRS 488 Senior Seminar 3
CLRS 493 Clinical Education IV 2 3
CLRS 494 Clinical Education V 2 3
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality)

Ancillary requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARRT radiation therapy certification (credits applied toward degree)</td>
<td>50</td>
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<tr>
<td>Additional subjects and credits required for admission</td>
<td>12</td>
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<tr>
<td>STAT 210 Basic Practice of Statistics</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 200 Advanced Focused Inquiry: Literacies, Research and Communication (satisfies general education UNIV foundations)</td>
<td>3</td>
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</tbody>
</table>

Total Hours: 120

1 Some general education categories will be met with admission requirements. Consult with an adviser to determine remaining categories.

2 These courses have variable credits. The credits indicated are the most commonly used in the curriculum.

3 See special requirements section for details of prerequisite courses.

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.

Minimum credits from ARRT certification and courses from accredited college or university: 62

Junior year

**Fall semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALHP 430</td>
<td>Overview of Research in the Health Professions</td>
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<tr>
<td>CLRS 305</td>
<td>Orientation to Radiation Therapy</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 309</td>
<td>Oncologic Patient Care</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 323</td>
<td>Radiation Therapy, Techniques and Applications</td>
<td>4</td>
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<tr>
<td>CLRS 393</td>
<td>Clinical Education I</td>
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</tr>
<tr>
<td>STAT 210</td>
<td>Basic Practice of Statistics</td>
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</table>

Term Hours: 16

**Spring semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLRS 206</td>
<td>Cross-sectional Anatomy</td>
<td>2</td>
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<td>CLRS 314</td>
<td>Pathology and Treatment Principles I</td>
<td>4</td>
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<tr>
<td>CLRS 342</td>
<td>Physics for Radiation Therapy</td>
<td>3</td>
</tr>
<tr>
<td>CLRS 394</td>
<td>Clinical Education II</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 398</td>
<td>Introduction to Research</td>
<td>1</td>
</tr>
<tr>
<td>UNIV 200</td>
<td>Advanced Focused Inquiry: Literacies, Research and Communication (satisfies general education UNIV foundations)</td>
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Term Hours: 15

**Summer semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>CLRS 395</td>
<td>Clinical Education III</td>
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</table>

Term Hours: 3

Senior year

**Fall semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CLRS 408</td>
<td>Introduction to Computed Tomography (CT)</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 415</td>
<td>Pathology and Treatment Principles II</td>
<td>4</td>
</tr>
<tr>
<td>CLRS 455</td>
<td>Quality Management in Radiation Therapy</td>
<td>2</td>
</tr>
<tr>
<td>CLRS 493</td>
<td>Clinical Education IV</td>
<td>3</td>
</tr>
<tr>
<td>CLRS 498</td>
<td>Senior Project</td>
<td>2</td>
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Term Hours: 13

**Spring semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLRS 412</td>
<td>Radiation Therapy Treatment Planning</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 494</td>
<td>Clinical Education V</td>
<td>3</td>
</tr>
</tbody>
</table>

Term Hours: 11

Total Hours: 58

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