

# CLINICAL RADIATION SCIENCES, BACHELOR OF SCIENCE (B.S.) WITH A CONCENTRATION IN DIAGNOSTIC MEDICAL SONOGRAPHY (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

### Diagnostic medical sonography concentration-specific outcome

- Demonstrate proficiency in performing sonographic procedures

## Special requirements

### Prerequisites

Course	Title	Hours
ARRT certification (or eligibility) in radiography or NMTCB certification (or eligibility) in nuclear medicine <sup>1</sup>		
English composition		3
Humanities		3
Natural/physical science		3
Social science		3

<sup>1</sup>

Must be certified 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:

Course	Title	Hours
CLRS 301	Sonography Physics and Instrumentation I	3
CLRS 302	Sonography Physics and Instrumentation II	3
CLRS 311	Abdominal Sonography I	4
CLRS 329	Obstetric and Gynecologic Sonography I	3
CLRS 393	Clinical Education I	2
CLRS 394	Clinical Education II	2
CLRS 395	Clinical Education III	3
CLRS 404	Ultrasound Pathology and Preliminary Writing	2
CLRS 493	Clinical Education IV	3
CLRS 494	Clinical Education V	3
CLRS 488	Senior Seminar	3

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in diagnostic medical sonography (second modality)

Course	Title	Hours
<b>General education</b> ( <a href="http://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/">http://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/</a> )		
Select 30 credits of general education courses in consultation with an adviser. <sup>1</sup>		30
<b>Major requirements</b>		
• 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 301	Sonography Physics and Instrumentation I	3
CLRS 302	Sonography Physics and Instrumentation II	3
CLRS 311	Abdominal Sonography I	4
CLRS 325	Sonography Professional Seminar	3
CLRS 329	Obstetric and Gynecologic Sonography I	3
CLRS 393	Clinical Education I <sup>2</sup>	2
CLRS 394	Clinical Education II <sup>2</sup>	2
CLRS 395	Clinical Education III <sup>2</sup>	3
CLRS 401	Introduction to Pediatric Sonography	2
CLRS 404	Ultrasound Pathology and Preliminary Writing	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV <sup>2</sup>	3
CLRS 494	Clinical Education V <sup>2</sup>	3

**Ancillary requirements**

ARRT certification (credits applied toward degree)	50
Additional subjects and credits required for admission <sup>3</sup>	12
HCMG 300 Health Care Organization and Services	3
STAT 210 Basic Practice of Statistics	3
UNIV 200 Advanced Focused Inquiry: Literacies, Research and Communication (satisfies general education UNIV foundations)	3

**Open electives**

Select any course	5
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**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 for admission: 62**

**Junior year**

Fall semester	Hours
ALHP 430 Overview of Research in the Health Professions	3
CLRS 206 Cross-sectional Anatomy	2
CLRS 301 Sonography Physics and Instrumentation I	3
CLRS 311 Abdominal Sonography I	4
CLRS 393 Clinical Education I	2
STAT 210 Basic Practice of Statistics	3
<b>Term Hours:</b>	<b>17</b>

**Spring semester**

CLRS 302 Sonography Physics and Instrumentation II	3
CLRS 329 Obstetric and Gynecologic Sonography I	3
CLRS 394 Clinical Education II	2
CLRS 398 Introduction to Research	1
UNIV 200 Advanced Focused Inquiry: Literacies, Research and Communication (satisfies general education UNIV foundations)	3
<b>Term Hours:</b>	<b>12</b>

**Summer semester**

CLRS 325 Sonography Professional Seminar	3
CLRS 395 Clinical Education III	3
<b>Term Hours:</b>	<b>6</b>

**Senior year**

**Fall semester**

CLRS 401 Introduction to Pediatric Sonography	2
CLRS 404 Ultrasound Pathology and Preliminary Writing	2
CLRS 493 Clinical Education IV	3
CLRS 498 Senior Project	2
HCMG 300 Health Care Organization and Services	3
<b>Term Hours:</b>	<b>12</b>

**Spring semester**

CLRS 488 Senior Seminar	3
CLRS 494 Clinical Education V	3
Open electives	5
<b>Term Hours:</b>	<b>11</b>
<b>Total Hours:</b>	<b>58</b>

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