

DIAGNOSTIC MEDICAL SONOGRAPHY - ASSOCIATE IN APPLIED SCIENCE



DMSD, DMSE, DMSV

Occupational Title: Diagnostic Medical Sonographer
Flanagan Campus, Lincoln only

The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (<https://www.caahep.org/>), 25400 US Highway 19 North, Suite 158, Clearwater, FL, 33763; 727-210-2350, upon recommendation of the Joint Review Committee on Education in Diagnostic Medical Sonography, 6021 University Blvd., Suite 500, Ellicott City, MD, 21043; 443-973-3251.

Diagnostic medical sonography is a rapidly growing technology used to locate, evaluate and record pertinent anatomical, pathological and functional data to aid the physician in the diagnosis and prevention of disease. The Diagnostic Medical Sonography associate degree program is a 24-month program that begins in September. Students participate in five semesters of classroom instruction at CCRI and associated clinical education facilities to learn a wide variety of imaging techniques.

Students must select a concentration in either **general ultrasound**, **vascular** or **echocardiography**.

For concentration information see:

- General – Society of Diagnostic Medical Sonographers (SDMS (<https://www.sdms.org/>))
- Vascular – Society of Vascular Ultrasound (SVU (<https://www.svu.org/>))
- Echocardiography – American Society of Echocardiography (ASE (<https://www.asecho.org/>))
- or contact Paula Cardillo, CCRI DMSD program director, pcardillo@ccri.edu

Students successfully completing the program are eligible to take the American Registry of Diagnostic Medical Sonographers (ARDMS) registry examination. Graduates of this program are prepared for entry-level employment as sonographers (ultrasonographers) in hospitals, clinics, and private offices and/or for transfer to bachelor's degree programs.

Technical Standards: The physical activity (strength) level for sonographers (078.364.010) is classified as "light" by the Department of Labor in the Dictionary of Occupational Titles

Note: Many courses require prerequisites, corequisites and/or testing. See course descriptions for details (<https://catalog.ccri.edu/course-descriptions/>).

General Policies

See important general policies in the beginning of this section on the performance-based Health Sciences application process, academic progress, advanced placement, background check, CPR certification,

health insurance, health records, reinstatement, transportation, uniforms, and equipment.

Minimum Requirements to Apply to the Diagnostic Medical Sonography Program

1. **CCRI application** – Complete and submit an Application for Enrollment to CCRI. General Studies should be the first choice; Pre-Diagnostic Medical Sonography (DMSD) should be the second choice
2. **High school transcript** – An official copy of a high school or GED® transcript, including date of graduation, must be provided. If the applicant holds a baccalaureate degree from an accredited college or university, the high school transcript may be waived; a college transcript must indicate completion and degree awarded
3. **CCRI uses a multiple measures** approach to determine admission into Health Science programs (For example: High School and GED® transcripts, SAT, ACT, HESI A2 or ACCUPLACER scores). Placement can also be determined by taking college level English and Math courses. Anyone with a degree from a regionally accredited higher education institution may have this requirement waived following submission of the official college transcript. If using ACCUPLACER, the following guidelines are used:
 - **Placement testing** – Complete a standardized test (ACCUPLACER) issued by CCRI's Advising Center. Students may NOT retake the ACCUPLACER test before completing the remedial course/courses. Note: For application purposes, ACCUPLACER testing can be waived for students who provide documentation of a bachelor's degree or higher. Students are advised that individual departments may still require ACCUPLACER testing as a prerequisite for their courses.
 - **Reading comprehension test** must show competency of 90 or above in the Classic ACCUPLACER or a score of 259 or above in the Next Generation ACCUPLACER or students must complete Reading and Study Skills Program (ENGL 1002) with a grade of B- or better.
4. **Complete courses required** for admission with a grade of C or better:
 - Composition I (ENGL 1010) (or ENGL 1010A). Composition I for Speakers of English as a Second Language (ESL) (ENGL 1300) will not substitute for Composition I (ENGL 1010).
 - College Algebra (MATH 1200) or (MATH 1200C), Pre-Calculus Mathematics (MATH 2111), or Calculus I (MATH 2141).
 - Physics of Everyday Life (PHYS 1000). General Physics I (PHYS 1030) also meets this requirement.
5. **Complete courses required** for admission with a grade of B- or better:
 - Human Biology (BIOL 1070)
6. **GPA-** A cumulative grade point average of 2.0 or better for all college courses taken.
7. **Aptitude Examination** – Take the HESI (Health Educational System Incorporated) Exam administered through the Advising Center. Students are limited to two (2) attempts within a 12-month period. A minimum of two (2) weeks between exams is required.
8. **Health Sciences application** – Complete and submit performance-based Health Sciences application including a preadmission degree evaluation during the open enrollment period.
 - **Important:** Submission of a performance-based Health Sciences application does not guarantee acceptance to the program. Acceptance is based on points earned as listed in the program acceptance criteria point system. (See CCRI's Dean of Health & Rehabilitative Sciences (<https://www.ccri.edu/dean-hrs/>).) At the time of admission, students must meet the current admission requirements. Students declining acceptance into the program

for the semester offered must resubmit a performance-based Health Sciences application and meet the current admission requirements. Once accepted, students must attend a mandatory orientation conducted by the Allied and Rehabilitative Health Department.

9. **Background check** – Students are required to submit a background check when directed by notification from One Stop Student Services.

Program Requirements

- The major requirements for this program must be taken in sequence. They are open only to students who are formally accepted into the program.
- Students must complete all courses in the program with a cumulative index of 2.0 to qualify for a certificate.
- No grade less than a C** is acceptable in any of the technical courses (DMSD). Students receiving less than a C will be dismissed from the program.
- Program faculty reserve the right to require withdrawal of any student from the program or refuse reinstatement based on the student's academic, clinical or professional performance.

Program Learning Outcomes

General Ultrasound Concentration

Upon completion of this program, a student will be able to:

- Demonstrate the ability to communicate orally and in writing.
- Demonstrate the ability to think critically and solve problems in the clinical setting.
- Act as ethical and responsible members of the healthcare team.
- To prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.
- To prepare competent entry-level adult cardiac sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.
- To prepare competent entry-level vascular technologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

Echocardiography Concentration

Upon completion of this program, a student will be able to:

- Demonstrate the ability to communicate orally and in writing.
- Demonstrate the ability to think critically and solve problems in the clinical setting.
- Act as ethical and responsible members of the healthcare team.
- To prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.
- To prepare competent entry-level adult cardiac sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.
- To prepare competent entry-level vascular technologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

Vascular Concentration

Upon completion of this program, a student will be able to:

- Demonstrate the ability to communicate orally and in writing.
- Demonstrate the ability to think critically and solve problems in the clinical setting.
- Act as ethical and responsible members of the healthcare team.
- To prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.
- To prepare competent entry-level adult cardiac sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.
- To prepare competent entry-level vascular technologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

Requirements

Code	Title	Hours
Preadmission General Education Requirements - All Concentrations		
Courses must be taken prior to program admission:		
BIOL 1070	Human Biology Thinking	3
ENGL 1010	Composition I (or ENGL 1010A) Communication; Information Literacy	3
PHYS 1000	Physics of Everyday Life Quantitative Literacy	4
Choose ONE of the following:		3-4
MATH 1200	College Algebra (or MATH 1200C) Reasoning; Quantitative Literacy	1; MSCX; Scientific
MATH 2111	Pre-Calculus Mathematics Quantitative Literacy	2; MSCX; Scientific Reasoning;
MATH 2141	Calculus I Literacy	2; MSCX; Scientific Reasoning; Quantitative
Subtotal		13-14
General Education Requirements - All Tracks		
COMM 1010	Communication Fundamentals ^A Communication; Social and Professional Responsibilities	3
Literature Elective (https://catalog.ccri.edu/academic-information/general-education/course-attributes/#litgened/)		3
PSYC 2010	General Psychology Reasoning	4
PSYC 2030	Developmental Psychology Scientific Reasoning	3
Choose ONE of the following:		
Humanities Elective (https://catalog.ccri.edu/academic-information/general-education/course-attributes/#humngened/)		HUMN
Social Science Elective (https://catalog.ccri.edu/academic-information/general-education/course-attributes/#sscigened/)		SSCI
Subtotal		13
Concentration Requirements		
Select one of the following concentrations:		37
Echocardiography Concentration (DMSE)		
General Ultrasound Concentration (DMSD)		

Vascular Concentration (DMSV)	
Subtotal	37
Total Hours	63-64

¹ MATH 1200 or MATH 1200C only counts as a general education math course for students enrolled in the following career-oriented programs: CHMT, DMSD/DMSE/DMSV, and XRAY.

² Students that take MATH 2111 or MATH 2141 to fulfill the math requirement may need to take a prerequisite course. See course descriptions for details.

[^] Work-based learning course

Vascular Concentration (DMSV)

Code	Title	Hours
Major Requirements (DMSV)		
DMSD 2100	Patient Care in Sonography	3
DMSD 2210	Sonographic Physics	4
DMSD 2220	Sonographic Imaging	3
DMSD 2245	Sonographic Anatomy	3
DMSD 2250	Vascular Ultrasound I	4
DMSD 2251	Vascular Ultrasound II	4
DMSD 2252	Advanced Vascular Ultrasound	4
DMSD 2253	Vascular Practicum I [^]	3
DMSD 2254	Vascular Practicum II [^]	3
DMSD 2255	Vascular Practicum III [^]	3
DMSD 2500	Diagnostic Medical Sonography Seminar	3
Subtotal		37
Total Hours		37

[^] Work-based learning course

Total DMSV Program Credits 66-67

Echocardiography Concentration (DMSE)

Code	Title	Hours
Major Requirements (DMSE)		
DMSD 2100	Patient Care in Sonography	3
DMSD 2210	Sonographic Physics	4
DMSD 2220	Sonographic Imaging	3
DMSD 2245	Sonographic Anatomy	3
DMSD 2260	Echocardiography I	4
DMSD 2261	Echocardiography II	4
DMSD 2262	Advanced Echocardiography	4
DMSD 2263	Echocardiography Practicum I [^]	3
DMSD 2264	Echocardiography Practicum II [^]	3
DMSD 2265	Echocardiography Practicum III [^]	3
DMSD 2500	Diagnostic Medical Sonography Seminar	3
Subtotal		37
Total Hours		37

[^] Work-based learning course

Total DMSE Program Credits 66-67

General Ultrasound Concentration (DMSD)

Code	Title	Hours
Major Requirements (DMSD)		
DMSD 2100	Patient Care in Sonography	3
DMSD 2210	Sonographic Physics	4
DMSD 2220	Sonographic Imaging	3
DMSD 2230	Abdominal Ultrasound	4
DMSD 2235	Ultrasound for Small Parts, Gynecology and Male Pelvis	4
DMSD 2240	Obstetrical Ultrasound	4
DMSD 2241	General Ultrasound Practicum I [^]	3
DMSD 2242	General Ultrasound Practicum II [^]	3
DMSD 2243	General Ultrasound Practicum III [^]	3
DMSD 2245	Sonographic Anatomy	3
DMSD 2500	Diagnostic Medical Sonography Seminar	3
Subtotal		37
Total Hours		37

[^] Work-based learning course

Total DMSD Program Credits 66-67

Recommended Course Sequence - Echo

Course	Title	Hours
Prerequisites		
BIOL 1070	Human Biology	3
ENGL 1010	Composition I (or ENGL 1010A)	3
Choose ONE of the following:		3-4
MATH 1200	College Algebra (or MATH 1200C)	
MATH 2111	Pre-Calculus Mathematics	
MATH 2141	Calculus I	
Choose ONE of the following:		4
PHYS 1000	Physics of Everyday Life	
PHYS 1030	General Physics I	
Hours		13-14
Year 1		
Semester 1		
DMSD 2210	Sonographic Physics	4
DMSD 2220	Sonographic Imaging	3
DMSD 2245	Sonographic Anatomy	3
PSYC 2010	General Psychology	4
Hours		14
Semester 2		
DMSD 2100	Patient Care in Sonography	3
DMSD 2260	Echocardiography I	4
COMM 1010	Communication Fundamentals [^]	3
Hours		10
Summer Session		
DMSD 2261	Echocardiography II	4
DMSD 2263	Echocardiography Practicum I [^]	3
Hours		7

Year 2**Semester 1**

DMSD 2262	Advanced Echocardiography	4
DMSD 2264	Echocardiography Practicum II [^]	3
PSYC 2030	Developmental Psychology	3

Hours **10**

Semester 2

DMSD 2265	Echocardiography Practicum III [^]	3
DMSD 2500	Diagnostic Medical Sonography Seminar	3
Literature Elective (https://catalog.ccri.edu/academic-information/general-education/course-attributes/#litgened/)		3

Choose ONE of the following: 3

Humanities Elective (<https://catalog.ccri.edu/academic-information/general-education/course-attributes/#humngened/>)

Social Science Elective (<https://catalog.ccri.edu/academic-information/general-education/course-attributes/#sscigened/>)

Hours **12**

Total Hours **66-67**

[^] Work-based learning course

Recommended Course Sequence - General Ultrasound

Course	Title	Hours
Prerequisites		
BIOL 1070	Human Biology	3
ENGL 1010	Composition I (or ENGL 1010A)	3
Choose ONE of the following:		3-4
MATH 1200	College Algebra (or MATH 1200C)	
MATH 2111	Pre-Calculus Mathematics	
MATH 2141	Calculus I	
Choose ONE of the following:		4
PHYS 1000	Physics of Everyday Life	
PHYS 1030	General Physics I	
Hours		13-14

Year 1**Semester 1**

DMSD 2210	Sonographic Physics	4
DMSD 2220	Sonographic Imaging	3
DMSD 2245	Sonographic Anatomy	3
PSYC 2010	General Psychology	4

Hours **14**

Semester 2

DMSD 2100	Patient Care in Sonography	3
DMSD 2230	Abdominal Ultrasound	4
COMM 1010	Communication Fundamentals [^]	3

Hours **10**

Summer Session

DMSD 2235	Ultrasound for Small Parts, Gynecology and Male Pelvis	4
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DMSD 2241	General Ultrasound Practicum I [^]	3
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Hours **7**

Year 2**Semester 1**

DMSD 2240	Obstetrical Ultrasound	4
DMSD 2242	General Ultrasound Practicum II [^]	3
PSYC 2030	Developmental Psychology	3

Hours **10**

Semester 2

DMSD 2243	General Ultrasound Practicum III [^]	3
DMSD 2500	Diagnostic Medical Sonography Seminar	3
Literature Elective (https://catalog.ccri.edu/academic-information/general-education/course-attributes/#litgened/)		3

Choose ONE of the following: 3

Humanities Elective (<https://catalog.ccri.edu/academic-information/general-education/course-attributes/#humngened/>)

Social Science Elective (<https://catalog.ccri.edu/academic-information/general-education/course-attributes/#sscigened/>)

Hours **12**

Total Hours **66-67**

[^] Work-based learning course

Recommended Course Sequence - Vascular

Course	Title	Hours
Prerequisites		
BIOL 1070	Human Biology	3
ENGL 1010	Composition I (or ENGL 1010A)	3
Choose ONE of the following:		3-4
MATH 1200	College Algebra (or MATH 1200C)	
MATH 2111	Pre-Calculus Mathematics	
MATH 2141	Calculus I	
Choose ONE of the following:		4
PHYS 1000	Physics of Everyday Life	
PHYS 1030	General Physics I	
Hours		13-14

Year 1**Semester 1**

DMSD 2210	Sonographic Physics	4
DMSD 2220	Sonographic Imaging	3
DMSD 2245	Sonographic Anatomy	3
PSYC 2010	General Psychology	4

Hours **14**

Semester 2

DMSD 2100	Patient Care in Sonography	3
DMSD 2250	Vascular Ultrasound I	4
COMM 1010	Communication Fundamentals [^]	3

Hours **10**

Summer Session

DMSD 2251	Vascular Ultrasound II	4
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DMSD 2253	Vascular Practicum I [^]	3
Hours		7
Year 2		
Semester 1		
DMSD 2252	Advanced Vascular Ultrasound	4
DMSD 2254	Vascular Practicum II [^]	3
PSYC 2030	Developmental Psychology	3
Hours		10
Semester 2		
DMSD 2255	Vascular Practicum III [^]	3
DMSD 2500	Diagnostic Medical Sonography Seminar	3
Literature Elective (https://catalog.ccri.edu/academic-information/general-education/course-attributes/#litgened/)		3
Choose ONE of the following:		3
Humanities Elective (https://catalog.ccri.edu/academic-information/general-education/course-attributes/#humngened/)		
Social Science Elective (https://catalog.ccri.edu/academic-information/general-education/course-attributes/#sscigened/)		
Hours		12
Total Hours		66-67

[^] Work-based learning course

Transfer

Please meet with an Academic Advisor/Student Success Coach (<https://ccri.edu/advising/>) if you are interested in earning a bachelor's degree. Your Academic Advisor will help you select the courses that best prepare you for transfer to a four-year college or university.

Check out the Joint Admissions Agreement (<https://ccri.edu/jaa/>) if you are interested in transferring to Rhode Island College or the University of Rhode Island. The JAA program offers seamless transfer to RIC or URI with additional benefits. Transfer information, events, and articulations are available on the Transfer Center website (https://ccri.edu/oes/transfer_center/).