

Certificate in Cardiovascular Sonography

This is a 21-month certificate program in which students spend 30 to 40 hours each week at clinical affiliates dividing time between didactic coursework and hands-on clinical applications.

Students in the program benefit from the wide variety of diagnostic examinations conducted at The University of Kansas Health System and affiliated clinical sites. The curriculum incorporates detailed, structured, and comprehensive course work and teaches the student to use independent judgment in the acquisition of diagnostic information.

The following concentration areas are available in this program:

- **Adult echocardiography and vascular technology**
 - Become a credential Registered Diagnostic Cardiac Sonographer (RDCS) and Registered Vascular Technologist (RVT) through American Registry for Diagnostic Medical Sonography (ARDMS) or a Registered Cardiac Sonographer (RCS) and a Registered Vascular Specialist (RVS) through cardiovascular Credentialing International (CCI).
- **Adult and pediatric echocardiography**
 - Become a credentialed Registered Diagnostic Cardiac Sonographer (RDCS) with a specialty in pediatric echocardiography (PE) through ARDMS or a Registered Congenital Cardiac Sonographer (RCCS) through Cardiovascular Credentialing International (CCI).

Program accreditation, outcomes, and gainful employment disclosure are available at [cvt.kumc.edu](https://www.kumc.edu) (<https://www.kumc.edu/school-of-health-professions/academics/departments/respiratory-care-and-diagnostic-science/academics/cardiovascular-sonography-certificate-program/gainful-employment-disclosure.html>).

Academic Requirements

A bachelor's or associate's degree with an emphasis in science is **preferred but not required**

It is **required** that students applying for this program complete a minimum of 8 hours shadowing a cardiovascular sonographer. The shadowing experience must include a minimum of 4 hours observing adult echocardiography AND 4 hours of either pediatric echocardiography OR vascular sonography (depending on preferred area of specialization).

Documentation must be submitted at the time of application. See the program website for more details.

Prerequisite Courses

All college coursework must be from accredited institutions. Credentials or transcripts not from an accredited U.S. academic institution will require evaluation by KU before acceptance. The following courses must be completed from an accredited institution with a "C" grade or better to be eligible for this program:

- College level Algebra
- English or speech/oral communication
- Human Anatomy (*B grade preferred*)
- Human Physiology (*B grade preferred*)
- Medical terminology
- Physics

Grade Point Average

An overall grade point average of **2.5** (on a 4.0 scale) is required to be eligible to apply. In addition, student transcripts must document an individual course grade of no less than a "C" on each prerequisite course (above).

Health and Physical Requirements

Good physical and mental health are essential to this field. Specifically, excellent visual acuity is necessary. The student must also possess manual dexterity, sufficient hearing and speech ability, and good physical coordination in positioning patients and operating equipment. Students must have a full utility of both arms, both hands, and fingers in order to perform examinations and operate the equipment. The ability to handle extremely heavy objects is required.

Physical or other disabilities are evaluated on a case-by-case basis by the program and the Equal Opportunity Office at KU Medical Center. Please review the program's technical standards (<https://www.kumc.edu/school-of-health-professions/academics/departments/respiratory-care-and-diagnostic-science/academics/respiratory-care-degree-programs/respiratory-care-bachelors-degree/technical-standards.html>) for details.

Background Check and Drug Screen

The Joint Commission requires all incoming students to submit to a background check (<http://www.kumc.edu/school-of-health-professions/background-checks-and-drug-screening-for-students.html>) and provide the report to KU. This one-time fee must be paid directly to the company performing the background investigation. Applicants will be asked to provide information and make the payment only after official acceptance into the program. For more information, please see the School of Health Professions background check instructions. (<http://www.kumc.edu/school-of-health-professions/background-checks-and-drug-screening-for-students.html>) Drug screening is required for activities in a clinical environment. Depending on geographic location, more than one drug test may be needed.

International Students

An applicant is considered an international student if he or she requires a visa, or currently resides in the U.S. with non-immigrant status, or currently resides in the U.S. while applying for permanent residency. Additional requirements and documentation are required for international students to become eligible for KU programs. **Please review the information for international students (<http://www.kumc.edu/school-of-health-professions/information-for-international-applicants.html>) before applying.**

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The curriculum incorporates detailed, structured, and comprehensive course work and teaches the student to use independent judgment in the acquisition of diagnostic information.

Prior to an interview for acceptance into the program, students will choose to specialize in one of the following concentration areas:

- Adult Echocardiography & Vascular Technology
- Adult & Pediatric Echocardiography

Adult Echocardiography: All students complete the following courses during semesters 1-3

Code	Title	Hours
CVS 300	Patient Care I	1
CVS 305	Physics I	2
CVS 310	Adult Echocardiography I	3
CVS 315	Clinical Practicum I	6
CVS 320	Physics II	2
CVS 325	Adult Echocardiography II	3
CVS 330	Congenital Heart Disease	1
CVS 335	Clinical Practicum II	8
CVS 340	EKG I	1
CVS 345	Adult Echocardiography III	3
CVS 350	Clinical Practicum III	4

Emphasis: Pediatric Echocardiography

Students completing the pediatric echocardiography concentration will complete the following courses during semester 4 & 5.

Code	Title	Hours
CVS 410	Pediatric Echocardiography I	4
CVS 420	Clinical Practicum IV	8
CVS 440	Pediatric Echocardiography II	4
CVS 450	Clinical Practicum V	8

Emphasis: Vascular Technology

Students completing the vascular technology concentration will complete the following courses during semester 4 & 5.

Code	Title	Hours
CVS 400	Vascular Ultrasound I	4
CVS 420	Clinical Practicum IV	8
CVS 430	Vascular Ultrasound II	4
CVS 450	Clinical Practicum V	8

All students complete the following courses during semesters 1-3.

Year 1			
Fall	Hours Spring	Hours Summer	Hours
CVS 300	1 CVS 320	2 CVS 340	1
CVS 305	2 CVS 325	3 CVS 345	3
CVS 310	3 CVS 330	1 CVS 350	4

CVS 315	6 CVS 335	8	
	12	14	8

Total Hours 34

Students completing an emphasis in pediatric echocardiography will complete the following courses during semesters 4 & 5.

Year 2			
Fall	Hours Spring		Hours
CVS 410	4 CVS 440		4
CVS 420	8 CVS 450		8
	12		12

Total Hours 24

Students completing an emphasis in vascular technology will complete the following courses during semesters 4 & 5.

Year 2			
Fall	Hours Spring		Hours
CVS 400	4 CVS 430		4
CVS 420	8 CVS 450		8
	12		12

Total Hours 24

Technical Standards

Cardiovascular Sonography Certificate Program

The program prepares candidates to practice cardiovascular sonography within organizations and businesses. Graduates require knowledge and skills to function in diverse practice settings. An essential requirement for completing the cardiovascular sonography certificate program is an ability to function within a clinical learning environment and to interact with a variety of interprofessional teams and patients. Candidates admitted to the program must be able to perform the following.

Successful completion of the certificate program in cardiovascular sonography implies that the graduate will have acquired the knowledge and skills necessary to safely and competently deliver patient care as cardiovascular sonography provider. In the role as a health care provider, cardiovascular sonographers be able to deliver urgent and non-urgent care to patients of all ages and in all settings. Including hospital, chronic care facilities and in the home. The current health care system also requires the cardiovascular sonographer to be skilled in age-specific patient education. Therefore, all applicants and matriculating students must meet the expectations listed below. These expectations may be achieved with or without reasonable accommodation.

The following abilities and expectations are required of all graduates and matriculating students in the Department of Respiratory Care and Diagnostic Science.

Visual – Auditory: The applicant/student must be able to accurately observe patients from a distance or close at hand, correctly read and interpret digital, analogue or graphic gauges, scales and monitors, and recognize biohazardous fluids. The applicant/student must be able to hear audio and see visual alarms. They must also be able to hear breath and

heart sounds with a stethoscope and see cardiac/pulmonary waveforms on monitoring screens.

Sensory-Motor: The applicant/student must have sufficient fine and gross motor skill capabilities to perform patient care procedures. These procedures include but are not limited to the following: palpating, auscultating, percussing the chest, administering medications using airway and endotracheal access, obtaining blood samples from veins and arteries, performing cardiopulmonary resuscitation, turning and lifting patients, moving heavy, bulky equipment, maneuvering in tight places, and assembling and calibrating respiratory care equipment.

Communication: The applicant/student must be able to communicate accurately, orally and in writing, with all members of the healthcare team. They must also be able to perceive non-verbal communication. They must be able to communicate effectively and sensitively with patients, families and health care providers.

Intellectual-Conceptual, Integrative, and Quantitative Abilities: The applicant/student must be able to comprehend and apply concepts to the clinical setting. This involves physiologic measurements, mathematical computation, information gathering, interpretation and analysis of data, and problem solving.

Behavioral and Social Attributes: The applicant/student must act professionally and exercise good judgement, critical thinking, complete patient care responsibilities, and maintain effective relationships with others in classroom, laboratory and clinical settings. Applicants/students must be able to tolerate physically taxing workloads and to function effectively under stress. They must be able to adapt to changing environments, display flexibility and function in the uncertainties inherent to the health care setting. Compassion, integrity, concern for others, interpersonal skills, interest and motivation are all important personal important qualities.

TECHNICAL STANDARDS FOR ADMISSION AND RETENTION

Technical standards identify the requirements for admission, retention, and graduation of applicants and students respectively. I have reviewed and understand the requirements set forth in the Technical Standards for admission to, continuation in, and graduation from the KU School of Health Professions Department of Respiratory Care and Diagnostic Science.

To my knowledge, I can meet the requirements set forth in the Technical Standards with or without reasonable accommodation. I understand that it is the responsibility of candidates needing accommodation to register with and provide documentation of their disability and specific functional limitations to the Academic Accommodations Office, (913) 945-7035 or cukoko@kumc.edu. Candidates are encouraged to engage in this process now, in advance of new student orientation and the start of classes. Candidates are also encouraged to review The Students with Disabilities Policy, which contains additional information related to academic accommodations and is available at:

<https://kumc-publicpoliciesandprocedures.policystat.com/policy/13228748/latest>

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