Bachelor of Science in Diagnostic Science

The Bachelor of Science (BS) in Diagnostic Science degree (DXSC) provides a bachelor's degree completion option is manageable and accessible even for working professionals. The bachelor's degree will enable undergraduate students to specialize in a concentration of their choice while incorporating additional courses that will prepare them to advance professionally after completing the bachelor's degree. Students who meet the following criteria are eligible to apply:

- Students wishing to pursue a certificate in Cardiovascular Sonography CVS or Diagnostic Ultrasound and Vascular Technology DUVT
  - Due to the number of program curriculum credits and prerequisite courses that already exist in each certificate program, students who elect the degree completion option may only need to complete as few as 6-12 credit hours to secure the required 120 credits to earn a bachelor's degree
- Students wishing to earn a bachelor's degree with a concentration Nuclear Medicine Technology NMT
  - All NMT courses are delivered face-to-face on the KUMC campus
- Students who have earned an associate of science (AS) degree in radiation technology who wish to earn a bachelor's degree

Students electing to pursue a concentration (CVS, DUVT or NMT) must apply for and be accepted into their selected program of study according to the program admissions requirements. All concentration programs are delivered face-to-face on the KUMC campus and within each program's clinical affiliate locations.

All DXSC courses are 3 credits and are delivered online via 8-week blocks with the exception of the DXSC Capstone course which is 6 credit hours and is a full semester (16-weeks).

General Diagnostic Science Degree Advancement Admissions

The general degree advancement track is for students who have completed an associate of science or bachelor of science degree in imaging. *(Students interested in pursuing a concentration in Cardiovascular Sonography, Diagnostic Ultrasound and Vascular Technology, or Nuclear Medicine Technology should refer to the specific concentration for admissions requirements as they may differ from the general degree advancement track requirements listed below.)*

Applicants must currently be **one** of the following registered professionals

- Registered Radiology Technologist (ARRT)[1]
- Diagnostic Medical Sonographer (ARDMS)[1]
- Diagnostic Cardiac Sonographer (ARDMS)[1]
- Associate's degree in a medical imaging profession with current registry or licensure

Credentials or transcripts not from an accredited U.S. academic institution require evaluation by the KU Office of International Student Services before they can be accepted for eligibility.

- [1]The applicant may be a registry candidate but must pass the registry before entrance into the program.

Prerequisite Courses

The following college courses must be completed to be eligible for this program. Student transcripts must document an individual course grade of no less than "C" on each prerequisite course.

- College algebra
- College English
- Chemistry with lab
- General physics
- Medical terminology
- Humanities course
- Social sciences course
- Human anatomy with lab
- Human physiology with lab
- Speech/Oral communication

An overall grade point average of 2.5 (on a 4.0 scale) is required.

Degree Requirements for Concentration in Cardiovascular Sonography, Diagnostic Ultrasound and Vascular Technology, or Nuclear Medicine Technology

Applicants must meet all prerequisite course requirements and be selected through the application process for the desired concentration.

Cardiovascular Sonography Concentration Admissions

ACADEMIC REQUIREMENTS

A certificate, associate, or bachelor's degree in a health care or science-related field is preferred. Students without a certificate, associate, or bachelor's degree must meet one of the following criteria to be considered for admission:

1. Currently enrolled in a degree program with an emphasis in health care or science.
   – or –
2. Have substantial patient care experience working in the health care field.

Although not required, applicants are **strongly encouraged** to complete observation hours with a registered sonographer prior to application.

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.

PREREQUISITE COURSES

The following courses must be completed from an accredited institution with a "C" grade or better to be eligible for the program:

- College Algebra
- English or Communication
- Human Anatomy and Physiology

- Medical terminology
- Physics

These courses can be in progress at the time of application; verification of grades and completion will be done before the start of fall semester classes.

Diagnostic Ultrasound and Vascular Technology Concentration Admissions

ACADEMIC REQUIREMENTS

A certificate, associate, or bachelor's degree in a health care or science-related field is preferred. Students without a certificate, associate, or bachelor's degree must meet one of the following criteria to be considered for admission:

1. Currently enrolled in a degree program with an emphasis in health care or science.
   – or –
2. Have substantial patient care experience working in the health care field.

Although not required, applicants are **strongly encouraged** to complete observation hours with a registered sonographer prior to application.

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.

PREREQUISITE COURSES

The following courses must be completed from an accredited institution with a "C" grade or better to be eligible for the program:

- College Algebra
- English or Communication
- Human Anatomy and Physiology
- Medical terminology
- Physics

These courses can be in progress at the time of application; verification of grades and completion will be done before the start of fall semester classes.

Nuclear Medicine Technology Concentration Admissions

All admissions requirements for the Nuclear Medicine Technology concentration align with the General Diagnostic Science admissions requirements listed above.

Diagnostic Science Degree Requirements

Required courses:

Code	Title	Hours
DXSC 480	Simulation and Interprofessional Education (IPE)	3
DXSC 495	Management, Ethics, and Law in Healthcare	3
DXSC 500	Imaging Modality Exploration and Correlation	3
DXSC 620	Community and Global Health	3
DXSC 630	Lean Management	3
DXSC 640	Professional Communication	3
DXSC 650	Medical Writing & Research	3
DXSC 655	Leadership Management	3
DXSC 665	Capstone Project	6
Total Hours		**30**

Additional Coursework

If the student needs additional credits to reach the overall required 120 credits to earn a bachelor's degree, they may take additional general diagnostic science (DSXC) courses as electives. A minimum of 45 credit hours in courses numbered 300 or above is required for graduation.

Concentrations

Students completing the requirements described above will earn a Bachelor of Science in Diagnostic Science degree. Within Diagnostic Science, students may also choose to complete a concentration in Cardiovascular Sonography or a concentration is Diagnostic Ultrasound & Vascular Technology.

Students who wish to obtain certification in either the cardiovascular sonography or diagnostic ultrasound and vascular technology concentration will complete specific concentration program courses. If the student needs additional credits to reach the overall required 120 credits to earn a bachelor's degree, they may take additional general diagnostic science (DSXC) courses as electives. A minimum of 45 credit hours in courses numbered 300 or above is required for graduation.

Cardiovascular Sonography Concentration

All students must complete the following core 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	2
CVS 335	Clinical Practicum II	8
CVS 340	EKG I	1
CVS 345	Adult Echocardiography III	3
CVS 350	Clinical Practicum III	4
DXSC 665	Capstone Project	6

All students must complete electives. Students must choose between electives in Pediatric Echocardiography or in Vascular Technology.

Electives in Pediatric Echocardiography

Students completing the pediatric echocardiography electives will complete the following courses during semesters 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

Electives in Vascular Technology

Students completing the vascular technology electives will complete the following courses during semesters 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

Additional Coursework

If the student's transfer credits plus program curriculum and capstone do not total the required 120 credit hours, students may take additional general diagnostic science (DXSC) courses to reach the required 120 hours to earn a BS degree. Students will be advised of DXSC BS DA requirements and will be provided an academic plan to successfully complete the required 120 credit hours for graduation.

Diagnostic Ultrasound and Vascular Technology Concentration

Code	Title	Hours
UTEC 300	Foundations of Sonography	1
UTEC 310	Sonography Principles and Instrumentation I	2
UTEC 315	Sonography Principles and Instrumentation II	2
UTEC 320	Abdominal Sonography I	2
UTEC 325	Abdominal Sonography II	2
UTEC 330	Gynecologic Sonography	2
UTEC 335	Obstetrical Sonography	3
UTEC 340	Clinical Internship I	4
UTEC 345	Clinical Internship II	4
UTEC 350	Superficial Structures Sonography	2
UTEC 410	Vascular Technology I	1
UTEC 415	Vascular Technology II	2
UTEC 420	Abdominal Sonography III	1
UTEC 430	Advanced Sonography Seminar I	2
UTEC 435	Advanced Sonography Seminar II	3
UTEC 440	Clinical Internship III	3
UTEC 445	Clinical Internship IV	6
UTEC 450	Clinical Internship V	6
DXSC 665	Capstone Project	6

Additional Coursework

If the student's transfer credits plus program curriculum and capstone do not total the required 120 credit hours, students may take additional general diagnostic science (DXSC) courses to reach the required 120 hours to earn a BS degree. Students will be advised of DXSC BS DA requirements and will be provided an academic plan to successfully complete the required 120 credit hours for graduation.

Nuclear Medicine Technology Concentration

Code	Title	Hours
NMED 300	Introduction to Nuclear Medicine and Medical Law and Ethics for the Imaging Professional	3
NMED 310	Nuclear Chemistry and Physics	3
NMED 320	Radiopharmacy I	2
NMED 330	Clinical Procedures Lab I	2
NMED 340	Radiation Biology and Protection	2
NMED 350	Clinical Internship I	1
NMED 400	Nuclear Instrumentation & Quality Assurance	3
NMED 420	Radiopharmacy II	2
NMED 430	Clinical Procedures II	3
NMED 440	Clinical Internship II	5
NMED 450	Research Methods & Health Administration	1
NMED 460	Senior Seminar	2
NMED 470	Clinical Internship III	5

Sample 4-year plans for the BS in Diagnostic Science with the the following concentrations can be found here: concentration in Cardiovascular Sonography (https://catalog.ku.edu/health-professions/respiratory-care/diagnostic-science-bs/cardiovascular-sonography-conc/), concentration in Diagnostic Ultrasound & Vascular Technology (https://catalog.ku.edu/health-professions/respiratory-care/diagnostic-science-bs/diagnostic-ultrasound-vascular-tech-conc/) and concentration in Nuclear Medicine Technology (https://catalog.ku.edu/health-professions/respiratory-care/diagnostic-science-bs/nuclear-medicine-technology-conc/).

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Cardiovascular Sonography Certificate Program

Technical Standards

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

Diagnostic Ultrasound and Vascular Technology Certificate Program

Technical Standards

The program prepares candidates to practice diagnostic ultrasound and vascular technology within organizations and businesses. Graduates require knowledge and skills to function in diverse practice settings. An essential requirement for completing the diagnostic ultrasound and vascular technology 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 diagnostic ultrasound and vascular technology implies that the graduate will have acquired the knowledge and skills necessary to safely and competently deliver patient care as diagnostic ultrasound and vascular technology provider. In the role as a health care provider, diagnostic ultrasound and vascular technologists 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 diagnostic ultrasound and vascular technologist 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.

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Nuclear Medicine Technology Bachelor's Degree

Technical Standards

The program prepares candidates to practice nuclear medicine technology within organizations and businesses. Graduates require knowledge and skills to function in diverse practice settings. An essential requirement for completing the nuclear medicine technology bachelor's degree 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 bachelor's degree program in nuclear medicine technology implies that the graduate will have acquired the knowledge and skills necessary to safely and competently deliver patient care as nuclear medicine technology provider. In the role as a health care provider, nuclear medicine technologist 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 nuclear medicine technologist 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.

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