

DEPARTMENT OF ALLIED HEALTH

Imaging technologists operate sophisticated equipment to assist physicians diagnose and treat patients with a wide range of health problems. As highly skilled employees in a dynamic and growing field, imaging technologists often work in multiple specialty areas—radiologic technology, computed tomography, magnetic resonance imaging, sonography, cardiovascular-interventional technology, bone densitometry, and mammography.

As a student in the Allied Health Department, you are given unique and innovating learning opportunities from the moment you come to campus.

- Discover the perfect combination of theory and hands-on experience in all the leading modalities of diagnostic imaging, preparing you to be successful in a variety of environments
- Have access to state-of-the-art facilities in labs to practice your skills
- Gain extensive hands-on experience through a year-long clinical program that is coupled with online classes to reinforce what you learn at your clinical experience
- Learn with a diverse group of students from all over the region, since FHSU offers the only BS in Medical Diagnostic Imaging in the state
- Complete your studies as part of a small, close-knit group of students who support one another throughout the program
- Work closely with faculty who provide you personalized academic and career advising
- Find a job upon graduation, as employers actively seek out our graduates

The FHSU imaging programs will prepare you for a successful experience after college, demonstrated by a nearly 100% pass rate on national certification exams within Allied Health majors.

Program Goals

The mission of the program is assessed by the degree to which the program achieves the following goals:

- To provide communities with entry level radiographers skilled in diagnostic imaging procedures.
- To facilitate development of critical thinking, problem solving, technical competency, radiation safety, and effective communication skills.
- To provide an environment which encourages professional and personal growth.
- To enhance the quality of patient care provided to diverse populations.

Program Objectives

Upon completion of the Radiologic Technology Program, the student should be able to:

- Apply the knowledge of imaging principles and concepts to evaluate and produce diagnostic radiographs.
- Apply the knowledge acquired in the biological, physical, and behavioral sciences, math and liberal arts in the practice of radiological science.

- Provide quality patient care and education based on knowledge and empathy gained through clinical and classroom experiences.
- Utilize problem-solving, critical thinking, and communication skills to function within a highly technical work environment.
- Practice within the profession's legal and ethical boundaries.
- Perform a full range of radiologic procedures as an entry-level radiographer.

Program Benchmarks

- Ninety percent of student course evaluations will indicate they are satisfied with the overall instruction.
- Ninety percent of employers surveys returned will rank FHSU graduates better than graduates from similar programs.
- Ninety percent of graduates surveys returned will indicate high quality instruction.
- Graduates will have a 78 percent or better on all clinical affective evaluations.
- Maintain a 95 percent pass rate on the first ARRT examination per class.
- Maintain a 95 percent job placement within six months of graduation for those seeking employment.
- Maintain an 80 percent graduation rate.
- Returned Graduate Surveys will indicate 90 percent have critical thinking and problem solving skills.
- Returned Graduate Surveys will indicate 90 percent practice radiation safety.
- Returned Employer Surveys will indicate 90 percent of graduates will have the ability to communicate and interact with patients.
- Returned Employer Surveys will indicate 90 percent of graduates continue their professional and personal development.
- Ten percent of graduates will continue into more advanced level programs.
- Returned Employer Surveys will indicate 90 percent of graduates have the ability to provide care for diverse patient populations.

Admission Criteria

Students must submit a complete Radiologic Technology Program application form. To complete the application, students are required to provide the following packet of information:

1. all college transcripts, including FHSU,
2. ACT scores if available, and
3. high school transcripts if you are under 21 and/or if you are not a transfer student.

In order to be considered for the next class starting in the summer semester, we must receive your complete application before February 1.

Students seriously considering the program are strongly encouraged to arrange a visit to a radiology department. We recommend that you spend several hours observing the activities of the department so that you are better informed of the responsibilities you will gradually assume during your radiography training. Although a clinical visit is not required, preference will be given to students with an understanding of radiologic technology.

Students preparing for admission into the Radiologic Technology Program must complete the list of pre-radiologic technology courses before they will be allowed to begin the program. These courses can

be taken at FHSU or at any college as long as they are considered transferable equivalent credits by the FHSU Registrar. A letter grade of a 'C' or better is required for all pre-radiologic technology courses. Students are also required to have a cumulative GPA of 2.75 or better on a 4.0 scale.

Before February 15th, the complete applications will be thoroughly reviewed by the campus radiologic technology faculty. Based on the application materials submitted, approximately 50-55 of the most qualified applicants will be invited for an interview with the Program Selection Committee comprised of FHSU faculty and clinicians. Prior to the interview, students will be asked to make a prioritized list of the acceptable clinical sites for their clinical experience from the following locations: Garden City, Great Bend, Hays, Kansas City, Liberal, Olathe, Salina, Abilene, and Sterling. Students may choose to list only one or more of the clinical sites but should be aware that limiting the acceptable clinical sites decreases their chances of being accepted into the program. During the selection process, the program tries to match the student with the clinical site, and if accepted into the program, the student will be assigned to a clinical site for the duration of the program.

During the interview which lasts approximately 15 minutes, the Selection Committee will ask a series of questions to assess the following:

- How well does the candidate understand the field of radiologic technology?
- How well will the candidate be able to interact with patients and staff?
- Are there any reasons why the candidate would not be able to successfully complete the program?

In the two weeks following the interview, candidates will be notified in writing whether or not they were accepted into the program.

Students must be accepted into Fort Hays State University.

Note: Before beginning the program, students must complete a background check as required by affiliated clinical education sites. Also, students that have been convicted of a felony or misdemeanor may have violated the American Registry of Radiologic Technologists (ARRT) Rules of Ethics and may be considered ineligible to sit for board examinations. Individuals may submit a pre-application form to the ARRT (651-687- 0048) at any time either before or after entry into an approved educational program.

Certificates in Allied Health

The Department of Allied Health provides radiologic technologist certificates in several modalities of advanced imaging, offering numerous specialties for you to enhance your educational credentials.

Programs Associates

- Allied Health | Associate of Science: Radiologic Technology (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/radiologic-technology-as/>)

Bachelors

- Allied Health | Bachelor of Science in Medical Diagnostic Imaging (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/medical-diagnostic-imaging-bs/>)

- Allied Health | Bachelor of Science in Medical Diagnostic Imaging (Ultrasound) (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/medical-diagnostic-imaging-ultrasound-bs/>)

Certificates

- Certificate: Cardiovascular Interventional Technology (CVIT) (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/cvit-certificate/>)
- Certificate: Computed Tomography (CT) (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/ct-certificate/>)
- Certificate: Diagnostic Cardiac Sonography (RDCS) (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/rdcs-certificate/>)
- Certificate: Healthcare Administration (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/healthcare-administration-certificate/>)
- Certificate: Magnetic Resonance Imaging (MRI) (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/mri-certificate/>)
- Certificate: Women's Imaging (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/womens-imaging-certificate/>)

Masters

- Allied Health | Master of Professional Studies (Medical Imaging Administration or Education) (<https://catalog.fhsu.edu/health-behavioral-sciences/allied-health/medical-imaging-mps/>)

Courses

Radiologic Technology/Medical Diagnostic Imaging

RAD 199 Radiologic Technology Elective (1-12 Credits)

This course is designed to receive non-equivalent elective transfer credit.

RAD 260 Orientation to Radiologic Techniques (1 Credit)

The hospital environment and its terminology, with particular reference to radiology. SU

Eligibility Rules: Admission to AS in Rad Tech program

RAD 261 Radiologic Safety (1 Credit)

The course is designed to emphasize the methods of protection for patients, technologists, and other health care workers from ionizing radiation during radiologic procedures.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 262 Radiographic Procedures I +# (2 Credits)

This course provides the students with knowledge and cognitive skills underlying the performance of major tasks required of a radiologic technologist employed within the Radiology field.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 262L Radiographic Procedures I Laboratory (1 Credit)

Students shall study, practice and perform patient care, patient communication, exam positioning, operation and manipulation of radiographic equipment, and identification of anatomical structures on radiographic images.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 263 Radiographic Procedures II # (3 Credits)

Methods and procedures required to obtain a quality x-ray examination. This course provides the students with knowledge and cognitive skills underlying the performance of the major tasks required of a radiologic technologist employed in the field of radiology.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 263L Radiographic Procedures II Laboratory + (2 Credits)

Students shall study, practice and perform patient care, patient communication, exam positioning, operation and manipulation of radiographic equipment, and identification of anatomical structures on radiographic images. Students will concentrate on imaging areas of upper and lower extremity, shoulder girdle, and pelvic girdle.

RAD 264 Radiographic Procedures III # (2 Credits)

A continuation of the methods and procedures required to obtain a quality radiographic examination. Students shall study and practice patient positioning, operation and manipulation of radiographic equipment, and identification of anatomical structures on radiographic images for the areas of spine, trauma spine, headwork, and upper and lower gastrointestinal tract.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 264L Radiographic Procedures III Laboratory (1-3 Credits)

Students shall study, practice and perform patient care, patient communication, exam positioning, operation and manipulation of radiographic equipment, and identification of anatomical structures on radiographic images. Students will concentrate on imaging areas of spine, trauma spine, headwork, upper and lower gastrointestinal tract.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 265 Patient Care in Medical Imaging I (1 Credit)

This course provides the student with an introduction to medical imaging patient care concepts. Upon completion of this course the student will have knowledge of the healthcare delivery system, age specific care and communication, cultural diversity in healthcare, obtaining a medical history, charting medical information, medical asepsis, and infection control concepts.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 266 Patient Care in Medical Imaging II (1 Credit)

This course provides the student with an introduction to medical imaging patient care concepts. Upon completion of this course the student will have knowledge of responding to patient needs, patient assessment and assistance, basic vital signs, dealing with acute situations, special considerations for bedside imaging, venipuncture, and medication administration.

RAD 300 Radio-Biology (1 Credit)

Effects of ionizing radiations on or in living matter. Basic concepts and technical theory of matter and energy.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 330 Clinical Experience I (4 Credits)

The ten areas that constitute the radiologic department. Students will rotate through each specific area in the clinical setting.

RAD 331 Clinical Experience II (6 Credits)

The ten areas that constitute the radiologic department. Students will rotate through each specific area in the clinical setting.

RAD 332 Clinical Experience III (6 Credits)

The ten areas that constitute the radiologic department. Students will rotate through each specific area in the clinical setting.

RAD 340 Advanced Radiology Seminar I (2 Credits)

Advanced radiologic procedures in preparation for the registry examination.

RAD 341 Advanced Radiology Seminar II (2 Credits)

Advanced radiologic procedures in preparation for the registry examination.

RAD 342 Advanced Radiology Seminar III (2 Credits)

Advanced radiologic procedures in preparation for the registry examination.

RAD 363 Principles of Radiographic Exposures I (1 Credit)

The course will give the student a foundation for Medical Diagnostic Imaging by building a framework of information regarding creation of a diagnostic x-ray beam. The course will include discussions on atomic theory, requirements for x-ray properties, and necessary units of measurement.

Eligibility Rules: Has completed or currently enrolled in MATH 110 AND Admitted to RS in Rad Tech

RAD 364 Principles of Radiographic Exposure II + (2 Credits)

The course will give the student a foundation for Imaging by building a framework of information regarding creation of diagnostic radiographs. The course will include discussions on factors involved in capturing, creating, processing, and analyzing properties of radiographic images.

RAD 365 Special Procedures in Radiology (1 Credit)

This course will discuss concepts of special diagnostic imaging to include anatomy, techniques, and procedures. The course will include diverse subject matter that will help prepare the student for their radiology clinical rotation.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 366 Advanced Techniques in Radiology (1 Credit)

Advanced procedures in radiology including nuclear medicine, equipment maintenance, radiation therapy and departmental administration.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 367 Clinical Experience + (2-8 Credits)

The ten areas that constitute the radiologic department. Students will rotate through each specific area in the clinical setting.

Eligibility Rules: Permission for RAD367

RAD 368 Seminar in Radiology + (1-3 Credits)

Advanced radiologic procedures in preparation for the registry examination. S

Eligibility Rules: Permission for RAD368

RAD 369 Radiographic Topics (1-6 Credits)

Topics not covered in regular offerings including pediatric radiography, portable radiography, special radiographic patient care.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 371 Radiographic Film Critique (1 Credit)

Radiographic films performed by students are evaluated by the instructor and student to assess radiographic quality.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 372 Applied Biophysics in Radiology (2 Credits)

This course provides the student opportunities to acquaint themselves with specific principles applicable to radiology physics, basic physics, and electromagnetic physics. Upon completion of this course the student should have an understanding of basic principles involving radiologic physics.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 373 Radiologic Pathology (1 Credit)

Selected pathologic and anomalous conditions that can be demonstrated diagnostically by radiographic films.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 375 Computer Applications in Medical Radiology (2 Credits)

A study of the theory and application of dedicated computer systems that are used in imaging biological materials for purposes of medical diagnostics.

Eligibility Rules: Admission to AS in Rad Tech program

RAD 399 Radiologic Technology Elective (1-12 Credits)

This course is designed to receive non-equivalent elective transfer credit.

Diagnostic Medical Sonography

DMS 400 Diagnostic Medical Sonography I (1 Credit)

The course will emphasize the foundation and evolution of sonography and the role of the diagnostic medical sonographer. Students will learn the foundations of communication, medical techniques, patient care, and clinical assessment of sonographic procedures to enhance problem solving skills in the ultrasound imaging environment.

Eligibility Rules: Admission to DMS program

DMS 401 Diagnostic Medical Sonography II (1 Credit)

The course will continue to emphasize patient care techniques and student awareness of professional, ethical, and legal issues to expand upon the role of the diagnostic medical sonographer. Ethics, professionalism, legal essentials, ergonomics, prevention of work-related injury, medical emergency, infection control, invasive procedures, and surgical asepsis will be emphasized to assist the student with critical thinking skills in the ultrasound imaging environment. The student will analyze these components with review of the FHSU DMS Clinical Handbook.

Eligibility Rules: Admission to DMS program

DMS 402 Ultrasound Physics and Instrumentation I (2 Credits)

The course is designed to emphasize the physical principles of ultrasound and instrumentation of ultrasound equipment for optimal visualization in diagnostic medical sonography examinations.

Eligibility Rules: Has completed or currently enrolled in MATH 110 AND Admitted to RS in Rad Tech

DMS 403 Ultrasound Physics and Instrumentation II (2 Credits)

The course continues to emphasize the physical principles of ultrasound equipment for optimal visualization in medical diagnostic ultrasound examinations.

Eligibility Rules: Admission to DMS program

DMS 404 Abdominal Ultrasound Procedures I (2 Credits)

The course is designed to emphasize the physics and instrumentation of ultrasound for optimal visualization in abdominal diagnostic medical sonography examinations. Primary emphasis will be the role of ultrasound in evaluation of the abdominal vasculature, biliary tree, pancreas, and thyroid. Pathological patterns of these various systems will be discussed and related to the sonographic appearance, physiologic changes, and laboratory findings.

DMS 405 Abdominal Ultrasound Procedures II (2 Credits)

The course is designed to emphasize the physics and instrumentation of ultrasound for optimal visualization in abdominal diagnostic medical sonography examinations. Primary emphasis will be the role of ultrasound in evaluation of the abdominal organs including the liver, spleen, urinary tract, scrotum, and ultrasound-guided procedures. Pathological patterns of these various systems will be discussed and related to the sonographic appearance, physiologic changes, and laboratory findings.

Eligibility Rules: Admission to DMS program

DMS 406 Obstetric/Gynecology Ultrasound Procedures I (2 Credits)

The course is designed to emphasize the physics and instrumentation of ultrasound for optimal visualization in obstetric/gynecologic medical diagnostic ultrasound examinations. Primary emphasis will be the role of ultrasound in the evaluation of the non-gravid female pelvis to include normal sonographic appearance, physiologic changes, laboratory findings, and pathological processes of the uterus and adnexa. Additional material will include menstrual physiology, hormonal influences, early embryonic development, ethical considerations of obstetric ultrasound, and sonographic evaluation of the normal and abnormal first trimester.

Eligibility Rules: Admission to DMS program

DMS 407 Obstetric/Gynecology Ultrasound Procedures II (2 Credits)

The course continues to emphasize the physics and instrumentation of ultrasound for optimal visualization in obstetric/gynecologic medical diagnostic ultrasound examinations. Application of ultrasound in the evaluation of the non-gravid female pelvis to compare normal sonographic appearance and physiology to pathological processes of the uterus and adnexa. Primary emphasis will be the role of ultrasound in the evaluation of the first, second, and third trimesters of pregnancy, screening for genetic fetal anomalies, multiple gestations, maternal disorders, abnormalities associated with fetal growth, and complications associated with delivery.

Eligibility Rules: Admission to DMS program

DMS 408 Vascular Ultrasound Procedures I (2 Credits)

The course is designed to emphasize the physics and instrumentation of ultrasound for optimal visualization in vascular diagnostic medical sonography examinations. Primary emphasis will include the hemodynamics, color flow, and Doppler spectral analysis of the abdominal, lower extremity venous, and lower extremity arterial vasculature. Additional vascular applications will include Doppler instruments and indirect testing methods.

Eligibility Rules: Admission to DMS program

DMS 409 Vascular Ultrasound Procedures II (2 Credits)

The course continues to emphasize the physics and instrumentation of ultrasound for optimal visualization in vascular medical diagnostic ultrasound examinations. Primary emphasis will include the hemodynamics, color flow, and Doppler spectral analysis of the upper extremity venous and arterial vasculature, carotid, vertebral and transcranial vasculature, and selective abdominal vasculature. Additional vascular applications will include Doppler instruments and indirect testing methods.

Eligibility Rules: Admission to DMS program

DMS 410 General Ultrasound Procedures I Laboratory (2 Credits)

A laboratory course designed for identification of appropriate anatomy during routine obstetrical/gynecological and abdominal ultrasound procedures utilizing the fundamental principles of physics and instrumentation of diagnostic ultrasound equipment.

Eligibility Rules: Permission for DMS410

DMS 411 General Ultrasound Procedures II Laboratory (2 Credits)

A laboratory course designed to continue identification of appropriate anatomy during routine obstetrical/gynecological and abdominal ultrasound procedures utilizing the fundamental principles of physics and instrumentation of diagnostic ultrasound equipment.

Eligibility Rules: Admission to DMS program

DMS 412 Vascular Ultrasound Procedures I Laboratory (2 Credits)

A laboratory course designed for identification of appropriate vascular anatomy during routine vascular ultrasound procedures utilizing the fundamental principles of physics and instrumentation of diagnostic ultrasound equipment.

Eligibility Rules: Admission to DMS program

DMS 413 Vascular Ultrasound Procedures II Laboratory (2 Credits)

A laboratory course designed to continue identification of appropriate vascular anatomy during routine vascular ultrasound procedures utilizing the fundamental principles of physics and instrumentation of diagnostic ultrasound equipment.

Eligibility Rules: Admission to DMS program

DMS 414 Breast Ultrasound Procedures (2 Credits)

The course is designed to emphasize the physics and instrumentation of ultrasound for optimal visualization in medical diagnostic ultrasound examinations of the breast. Primary emphasis will include the normal anatomy of the female and male breast, the normal physiology of breast tissue, clinical evaluation of patients for breast imaging, historical overview of breast imaging, ACR BI-RADS classifications of mammographic masses, normal sonographic evaluation of the breast, and sonographic evaluation of breast masses. Additional diagnostic imaging procedures will include Doppler and Color Doppler applications, breast implant imaging, and the role of ultrasound in diagnostic and interventional procedures in the breast.

Eligibility Rules: Admission to DMS program

DMS 415 Neurosonography (1 Credit)

The course is designed to emphasize the physics and instrumentation of ultrasound for optimal visualization in neurologic diagnostic medical sonography examinations. Primary emphasis will be the role of ultrasound in the evaluation of neonate and infant brain. Pathological patterns of the various brain structures and developmental stages will be discussed and related to the sonographic appearance, physiologic changes, and laboratory findings.

Eligibility Rules: Admission to DMS program

DMS 416 Superficial Ultrasound Procedures (1 Credit)

The course is designed to emphasize the physics and instrumentation of ultrasound for optimal visualization in superficial medical diagnostic ultrasound examinations. Primary emphasis will be the role of ultrasound in evaluation of the thyroid/parathyroid, scrotum, prostate, and other non-routine examinations. Pathological patterns of the various organs and systems will be discussed and related to the sonographic appearance, physiologic changes, and laboratory findings.

Eligibility Rules: Admission to DMS program

DMS 417 Clinical Sonography I (2 Credits)

The course will focus on advanced applications relative to physics and instrumentation in sonographic medical imaging. Students will review ultrasound physical principles to develop systematic methods for applications of proper instrumentation within general and vascular ultrasound procedures within a clinical environment and for preparation for the national registry physics and instrumentation examination offered through the American Registry of Diagnostic Medical Sonography.

Eligibility Rules: Admission to DMS program

DMS 418 Clinical Sonography II (2 Credits)

The course will provide continued emphasis of advanced sonographic applications. Students will review ultrasound methods for application of proper instrumentation within general and vascular ultrasound procedures in a clinical environment. Ultrasound procedures to be emphasized will include the abdominal cavity, abdominal vasculature and Doppler, urinary system, pancreas, genetic testing procedures, chromosomal abnormalities, amniotic fluid and membranes, nuchal translucency and fold, cervix, placenta, umbilical cord and Doppler, fetal central nervous system, face, neck, thorax, and abdominal wall, and vascular indirect testing methods.

Eligibility Rules: Admission to DMS program

DMS 419 Clinical Sonography III (2 Credits)

The course will provide continued emphasis on advanced sonographic applications. Students will review ultrasound principles to develop systematic methods for application of proper instrumentation within general and vascular ultrasound procedures in a clinical environment. Ultrasound procedures to be emphasized will include the pancreas, gallbladder/biliary ducts, liver, spleen, fetal thorax, heart, abdomen, abdominal wall, genitourinary, skeletal, multiple gestations, upper and lower extremity venous and arterial, and hemodialysis access. Additional focus will include both arterial and venous hemodynamics and indirect testing methods within vascular procedures to include transcranial Doppler.

Eligibility Rules: Admission to DMS program

DMS 420 Advanced Ultrasound Seminar I (1 Credit)

The course is designed to provide students the opportunity to review all program curriculum for the abdominal, obstetric/gynecologic, and vascular technology specialty areas in preparation for the national registry examinations offered through the American Registry of Diagnostic Medical Sonography. Review activities and group discussions will help clarify difficult concepts. Students will review the examination content outlines for all specialty area examinations. Mock registry examinations will be assigned. Additional emphasis will include test taking strategies, continuing education requirements with life-long learning strategies, and development of strategies for implementing change within the DMS environment.

Eligibility Rules: Admission to DMS program

DMS 421 Advanced Ultrasound Seminar II (2 Credits)

The course is designed to provide students the opportunity to review all program curriculum for the abdominal, obstetric/gynecologic, and vascular technology specialty areas in preparation for the national registry examinations offered through the American Registry of Diagnostic Medical Sonography. Review activities and group discussions will help clarify difficult concepts. Students will review the examination content outlines for all speciality area examinations. Mock registry examinations will be assigned. Additional emphasis will include test taking strategies, continuing education requirements with life-long learning strategies, and development of strategies for implementing change within the DMS environment.

DMS 430 DMS Clinical Experience I + (1-8 Credits)

The course will provide the student the opportunity to apply abdominal, obstetrical/gynecologic, and vascular ultrasound principles within the clinical environment. The student will be expected to observe, assist, and perform ultrasound procedures under direct supervision of a registered diagnostic medical sonographer utilizing appropriate physics and instrumentation principles.

Eligibility Rules: Admission to DMS program

DMS 431 DMS Clinical Experience II + (1-8 Credits)

The course will provide the student the opportunity to apply abdominal, obstetrical/gynecologic, and vascular ultrasound principles within the clinical environment. The student will be expected to observe, assist, and perform ultrasound procedures under direct supervision of a registered diagnostic medical sonographer utilizing appropriate physics and instrumentation principles.

Eligibility Rules: Admission to DMS program

DMS 432 DMS Clinical Experience III + (1-8 Credits)

The course will provide the student the opportunity to apply abdominal, obstetrical/gynecologic, and vascular ultrasound principles within the clinical environment. The student will be expected to observe, assist, and perform ultrasound procedures under direct supervision of a registered diagnostic medical sonographer utilizing appropriate physics and instrumentation principles.

Eligibility Rules: Admission to DMS program

DMS 450 Echocardiography I (2 Credits)

The course is designed to emphasize fundamental principles of diagnostic cardiac sonography. The student will learn basic cardiovascular anatomy and physiology along with the general protocol for transthoracic echocardiograms. Components of the cardiac cycle will be defined along with understanding the different modes of echocardiography, to include M-mode, 2-dimensional echocardiography, color flow Doppler, and spectral Doppler.

Eligibility Rules: Permission for DMS450

DMS 451 Echocardiography II (2 Credits)

The course is designed to emphasize additional cardiac imaging modalities, understanding the fundamentals of transesophageal echocardiography, stress echocardiography, and cardiac catheterization. The student will gain an understanding of the basic embryology of the heart through the 7th week of fetal development and understand the components of fetal circulation. Congenital heart defects will be defined along with the hemodynamic effects on the cardiovascular system.

Eligibility Rules: Permission for DMS451

DMS 452 Cardiac Pathophysiology I (2 Credits)

The course is designed to emphasize cardiac pathologies involving valvular disease, myocarditis, pericarditis, and prosthetic valves. The student will gain an understanding of the hemodynamic effects these pathologies place on the heart and the associated sonographic findings. They will also be able to differentiate between mechanical and bioprosthetic heart valves and understand the associated complications.

Eligibility Rules: Permission for DMS452

DMS 453 Cardiac Pathophysiology II (2 Credits)

The course is designed to emphasize cardiac pathologies involving ischemic heart disease, heart failure, cardiomyopathies, cardiac neoplasms, and disease of the aorta. The student will gain an understanding of the hemodynamic effects these particular pathologies place on the heart, the associated sonographic findings, and understand the related complications.

Eligibility Rules: Permission for DMS453

DMS 454 Cardiac Case Review (1 Credit)

The course is designed to provide the student the opportunity for professional growth and development within echocardiography. Each student is required to develop and submit a case report over a cardiac pathology for potential publication within a peer-reviewed professional journal. Each student will also be responsible for reviewing and evaluating fellow student submissions establishing an understanding of the importance of continuing education.

Eligibility Rules: Permission for DMS454

DMS 460 Medical Imaging Preceptorship: Cardiac Sonography (1-8 Credits)

The course will provide the student the opportunity to apply echocardiography principles within the clinical environment. The student will be expected to observe, assist, and perform adult cardiac procedures under direct supervision of a registered diagnostic cardiac sonographer utilizing appropriate physics and instrumentation principles.

Eligibility Rules: Permission for DMS460