

MEDICAL IMAGING, DIAGNOSTIC MEDICAL SONOGRAPHY, ASSOCIATE OF APPLIED SCIENCE



Program Information

A Diagnostic Medical Sonographer is a person qualified to provide patient imaging using ultrasound technology and equipment under the supervision of a medical doctor to examine many parts of the body, such as the abdomen, breasts, female and male reproductive systems, and more.

The Diagnostic Medical Sonography program at San Jacinto College:

- Prepares students to work in entry-level positions in hospitals and other health care facilities through hands-on laboratory practice and a variety of clinical rotations;
- Trains students to use high frequency sound waves to produce images used for assessment and diagnosis of various medical conditions. The program concentrates on imaging the organs of the abdomen, pelvis, superficial structures as well as obstetrics; and
- Grants students eligibility to apply to take exams for the American Registry of Diagnostic Medical Sonography (ARDMS).

Program Accreditation

The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org (<https://www.caahep.org/>)) upon the recommendation of the Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS).

Commission on Accreditation of Allied Health Education Programs (CAAHEP)
9355 113th Street N, #7709
Seminole, FL 33775
727-210-2350
www.caahep.org (<https://www.caahep.org/>)

Accreditation Award 5 years.

Additional Information

- Full-time days for classes; variable shifts for clinicals
- Partnership with approximately 17 clinical facilities around Houston area (including Pearland, Texas Medical Center, and Galveston); and
- Typical school calendar is followed (16-week spring and fall terms; 13-week summer term).

Career Opportunities

Employment of sonographers is expected to grow by 28.5 percent by 2030. Sonographic technology is expected to evolve rapidly and to spawn many new sonography procedures, such as 3D- and 4D-sonography for use in obstetric and ophthalmologic diagnosis.

Earning Potential

Diagnostic Medical Sonographer: \$78,190 per year¹

¹ Source: texaswages.com (<http://texaswages.com>), median salary Gulf Coast region, 2023

Campus

Central Campus

Information

Medical Imaging Technology consists of three associate of Applied Science (AAS) degrees and three certificate programs.

The AAS degree programs are:

- Medical Radiography,
- Diagnostic Medical Sonography, and
- Magnetic Resonance Imaging.

The advanced or enhanced certificate programs are:

- Computed Tomography,
- Magnetic Resonance Imaging, and
- Mammography.

Students enrolling into San Jacinto College programs with external learning experiences (i.e., clinical, practicum, externship, cooperative, etc.) will be required to comply with the immunization requirements and policies of the clinical/external learning sites to engage in all clinical/external learning experiences. Vaccination requirements at clinical/external learning sites are implemented pursuant to the independent authority of such facilities and are not mandated by San Jacinto College. Failure to meet the immunization requirements mandated by clinical/external learning sites may limit a student's ability to complete the program and/or may delay the student's graduation date. San Jacinto College does not process exemptions, and students should address potential vaccination exemptions directly with the clinical/external learning site.

Associate of Applied Science Degree

A Diagnostic Medical Sonographer is a person qualified to provide patient imaging using ultrasound under the supervision of a medical doctor. The Diagnostic Medical Sonography program prepares students to work in entry-level positions in hospitals and other health care facilities. Upon completion of the Diagnostic Medical program, the student is granted

an Associate of Applied Science (AAS) degree and is eligible to apply to take exams for the American Registry of Diagnostic Medical Sonography (ARDMS).

Program Goals and Student Learning Outcomes

The goal of the Diagnostic Medical Sonography program is to prepare competent entry-level sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains for the Abdominal Sonography-Extended and Obstetrics and Gynecology Sonography concentrations. In accordance with fulfilling its purpose, the program will provide experience to support the following: develop proficiency by not settling for a minimum standard; develop independence by showing initiative to complete tasks without being directed to do so; assume responsibility by accepting constructive comments from personnel, physicians, and instructors; solve problems by doing anything, which is reasonable and within one's sphere of influence, to resolve dilemmas; organize work by arranging tasks so that they are performed accurately and expeditiously; and integrate previous learning by utilizing concepts learned in the past to improve current clinical performance.

1. Graduates will be clinically competent sonographers in the Abdomen Sonography-extended and Obstetrics and Gynecology concentrations.
2. Graduates will be eligible to apply for, take, and pass the American Registry of Diagnostic Medical Sonography for the Abdomen and Obstetrics/Gynecology concentrations.
3. Graduates will be able to find employment.
4. Graduates will be satisfied with their education.
5. Employers will be satisfied with graduates' education.

Cognitive Domain: Students will demonstrate skills in critical thinking by synthesizing basic and core knowledge specific to the role of a diagnostic medical sonographer.

1. Students will be able to function in the health care setting demonstrating appropriate knowledge and skills in patient care, sonographic equipment, patient safety guidelines and universal precautions.
2. Students will accurately assess and interpret data from patient medical records.
3. Students will adjust technical factors to achieve ALARA principles during sonographic examinations.

Psychomotor Domain: Students will demonstrate the skills of a competent entry-level sonographer.

1. Students will be able to exhibit clinical competence in patient care, equipment manipulation, image evaluation, and technical factor selection.
2. Students will embody the skills necessary to perform patient assessment and care.
3. Students will adjust technical factors to meet the needs of individual sonographic examination.

Affective Domain: The students will value the diagnostic medical sonography profession by demonstrating ethical behavior and effective communication.

1. Students will utilize effective oral and written communication skills as required of in a healthcare setting.
2. Students will be able to maintain the values of a professional sonographer by following ethical guidelines and exhibiting professional behavior.

Admission Requirements

Students are admitted annually into the Diagnostic Medical Sonography program. Due to limited clinical internship availability, students are admitted on a competitive basis. In addition to the general admission requirements of San Jacinto College, all prerequisite courses must be completed prior to acceptance into the Diagnostic Medical Sonography program. Preference will be given to applicants who meet one of the following when applying to the program:

- Graduate of a two (2) year patient-related allied health care program (radiography, respiratory, paramedic, nursing, occupational therapy, or surgical technology);
- Bachelor's degree (any major);
- Licensed Vocational Nurse (LVN) graduate;
- Certified Nurse Aide (CNA) +2 years work experience; or
- 3+ years direct patient care work experience.

Students selected for any of the Medical Imaging programs are required to submit a physical exam prior to admission. This physical exam must be consistent with the requirements of the teaching hospitals and agencies to which the student is assigned during clinical assignments and with the performance standards required to function as a student imaging technologist. The exam will also include documentation of any communicable diseases along with immunity to Rubella, Measles, Mumps, Varicella, and Hepatitis B. Additionally, completion of an updated Tetanus vaccine, an annual TB screening, and a seasonal flu vaccine is required. Clinical affiliates may require additional immunizations, titers, and documentation.

In addition to meeting all other requirements, a criminal background check and drug and alcohol screening are required for all health science students attending imaging courses and are required prior to admission to the program. Students entering a Medical Imaging program will also be required to show proof of health insurance and current CPR (American Heart Association-Health Care Provider) certification. Students may contact the Medical Imaging department for details regarding the criminal background check and drug screening requirements.

Application Requirements

To be considered for selection to the Diagnostic Medical Sonography Program, students must complete the following steps:

1. Be admitted to San Jacinto College. Visit the website at <https://www.sanjac.edu/admissions/how-to-apply/>
2. Provide Official Transcripts:
 1. Students with any transfer credits must have college transcripts analyzed by San Jacinto College (enrollment services transcript evaluation) prior to submitting an application.
 2. Medical Imaging Department Chair has final approval of all transferred courses that apply toward the degree in Diagnostic Medical Sonography.
 3. Transcripts from other colleges must be official and submitted to:

- a. Office of Enrollment Services, and
- b. Online application on the program webpage (<https://www.sanjac.edu/programs/areas-of-study/health/medical-imaging/sonography-admission-info/>). (<https://www.sanjac.edu/programs/areas-of-study/health/medical-imaging/sonography-admission-info/>)

3. Register for and attend a mandatory information session as posted on the program webpage (<https://www.sanjac.edu/programs/areas-of-study/health/medical-imaging/sonography-admission-info/>) or by calling 281-476-1871.

4. Complete and submit a Diagnostic Medical Sonography Program Application with all required documents by the posted deadline.

5. Complete the HESI A2 exam through the San Jacinto College Medical Imaging department. A cumulative score of 70% and a score of 70% in each section is highly recommended.

6. Complete all of the following prerequisite courses with a minimum grade of a C before admission to the program.

Code	Title	Credits
BIOL 2301 & BIOL 2101	Anatomy and Physiology I (Lecture) and Anatomy and Physiology I (Lab) ¹	4
MATH 1314	College Algebra ²	3
SCIT 1420 or PHYS 1301 & PHYS 1101	Physics for Allied Health College Physics I (lecture) and College Physics I (lab)	4
DMSO 1110	Introduction to Sonography ³	1

¹ For credit earned in a required biology course to be applied to the Diagnostic Medical Sonography program, credit must have been earned within five (5) years of the first term in which the student enrolls in the program and with an earned grade of a C or above.

² Higher level math such as Calculus may be evaluated for possible substitution if a student was placed out of College Algebra. Substitutions must be approved by the Department Chair and Dean of Health and Natural Sciences.

³ For credit earned in DMSO 1110 Introduction to Sonography to be applied to the Diagnostic Medical Sonography program, credit must have been earned within five (5) years of the first term in which the student enrolls in the program and with an earned grade of a C or above.

Selection Criteria

Students who apply for admission to the Diagnostic Medical Sonography program will be selected based on the total score on the application rubric to include both GPA of pre-requisite courses and HESI A2 entrance examination scores. Meeting minimal entry requirements does not guarantee program admission. The admission scoring rubric is located on the San Jacinto College Diagnostic Medical Sonography webpage (<https://www.sanjac.edu/programs/areas-of-study/health/medical-imaging/sonography-admission-info/>).

Upon acceptance in the program, the applicant must submit required health records, proof of health insurance, CPR (American Heart Associate-Health Care Provider), criminal background check, and drug screen as stated for all Medical Imaging students.

In accordance with Texas House Bill 1508, the College informs all students in this program who may have a criminal background that a

criminal history could keep graduates from being licensed by the state of Texas. Students with any questions about their background and licensure may speak with the Department Chair.

Prospective applicants should call the Medical Imaging department at 281-476-1871 for additional information or visit the Diagnostic Medical Sonography Program webpage (<https://www.sanjac.edu/programs/areas-of-study/health/medical-imaging/sonography-admission-info/>). (<https://www.sanjac.edu/programs/areas-of-study/health/medical-imaging/sonography-admission-info/>)

Transfer Students

Course work from another diagnostic sonography program will be evaluated on an individual basis by the Program Director, Department Chair, and the Admission Appeals Committee. A grade of C or higher is required on all transferred prerequisite, general education, and program-specific courses from a regionally accredited institution of higher education. Program-specific courses must have been completed with a grade of C or higher from a CAAHEP accredited sonography program. Transfer students must obtain a letter from current Program Director verifying good standing academically and ethically. Transfer from another program will require successful completion of a one-time entrance didactic and skills competency exam based on program progression level. Non enrollment in a sonography program cannot exceed two semesters. Transfer student must meet all criteria required of San Jacinto College Diagnostic Medical Sonography program students and complete at least 50% of the program at San Jacinto College. Transfer students from another program will be admitted on a space-available basis.

Plan of Study

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Prerequisites		Credits
BIOL 2301 & BIOL 2101	Anatomy and Physiology I (Lecture) and Anatomy and Physiology I (Lab) ¹	4
MATH 1314	College Algebra ²	3
SCIT 1420 or PHYS 1301 and PHYS 1101	Physics for Allied Health or College Physics I (lecture) and College Physics I (lab)	4
DMSO 1110	Introduction to Sonography ³	1
Credits		12

First Term

HPRS 1204	Basic Health Profession Skills - Sonography	2
DMSO 1251	Sonographic Sectional Anatomy	2
DMSO 1441	Abdominopelvic Sonography	4
DMSO 1302	Basic Ultrasound Physics	3
Credits		11

Second Term

DMSO 1166	Practicum I - Diagnostic Medical Sonography	1
DMSO 2253	Sonography of Superficial Structures	2
DMSO 1342	Intermediate Ultrasound Physics	3
DMSO 2405	Sonography of Obstetrics/Gynecology	4
ENGL 1301	Composition I	3
Credits		13

Third Term

DMSO 1266	Practicum II - Diagnostic Medical Sonography	2
DMSO 1355	Sonographic Pathophysiology	3
DMSO 2343	Advanced Ultrasound Physics	3
Credits		8

Fourth Term

DMSO 1267	Practicum III - Diagnostic Medical Sonography	2
DMSO 2342	Advanced Obstetric Sonography	3
DMSO 2245	Advanced Sonography Practices	2
DMSO 2351	Doppler Physics	3
Credits		10

Fifth Term

DMSO 2230	Advanced Ultrasound and Review	2
DMSO 1367	Practicum IV - Diagnostic Medical Sonography	3
PSYC 2301	General Psychology	3
Language, Philosophy and Culture (Humanities) or Creative Arts (Fine Arts)		3
Credits		11
Total Credits		65

Capstone Experience: DMSO 1367 Practicum IV - Diagnostic Medical Sonography

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² Higher level math such as Calculus may be evaluated for possible substitution if a student was placed out of College Algebra. Substitutions must be approved by the Department Chair and Dean of Health and Natural Sciences.

³ For credit earned in DMSO 1110 Introduction to Sonography to be applied to the Diagnostic Medical Sonography program, credit must have been earned within five (5) years of the first term in which the student enrolls in the program and with an earned grade of a C or above.

Students must earn a C or better in all Diagnostic Medical Sonography (DMSO) and all science courses; the student will not be permitted to continue or to graduate from the program until that course has been repeated and a grade of C or above has been earned.