Diagnostic Medical Sonography

Program Purpose:
The purpose of the diagnostic medical sonography program is to prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains. 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.

Diagnostic Medical Sonography Program Goals
1. Graduates will be clinically competent sonographers.
2. Graduates will be eligible to apply for, take, and pass the American Registry of Diagnostic Medical Sonography.
3. Graduates will be able to find employment.
4. Graduates will be satisfied their education.
5. Employers will be satisfied with graduates’ education.

1.4 DMS Student Goals and Student Learning Outcomes

| The student goals for the Diagnostic Medical Sonography Program are as follows: | The student learning outcomes for the Diagnostic Medical Sonography Program are as follows: |
| Cognitive: Students will demonstrate skills in critical thinking. | 1. Students will demonstrate appropriate medical and patient care knowledge to function in the health care setting. |
| | 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: Students will demonstrate the skills of a competent entry-level sonographer. | 1. Students will effectively perform assigned clinical competencies. |
| | 2. Students will possess the skills necessary to perform patient assessment and care. |
| | 3. Students will properly adjust technical factors to meet the needs of individual sonographic examination. |
| Affective: The students will communicate effectively. | 1. Students will demonstrate effective oral and written communication within a healthcare setting. |
| | 2. Students will demonstrate ethical and professional behavior and maintain the values of a professional sonographer. |
| | 3. Students will demonstrate dependability and responsibility. |
Program Description
A 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 curriculum, the student is awarded an Associate of Applied Science degree. The student is eligible to apply for exams offered by the American Registry of Diagnostic Medical Sonographers (ARDMS) and/or the American Registry of Radiologic Technologist (ARRT).

- Full time days only (8:00am-5pm clinical day, 7:30am-4:00pm lecture day)
- ARDMS SPI pass rate of 100% in 2011 and 2012
- Clinical site rotations through 12 facilities (including Katy, Texas Medical Center, and League City)
- Typical school calendar is followed (16 week spring and fall, 13 week summer)
- Tuition, fees, books- approximately $2,400/year in district
- First semester-approximately $500 for immunizations, uniforms, CPR certification, online clinical system

Admission Criteria
1. Students must hold a 2-year or higher allied health care degree in a patient care related area. This includes, but is not limited to, medical radiography, registered nurse, respiratory technologist, occupational therapist, and emergency medical technologist.

   OR

2. Students may hold a Bachelor’s degree in any major or foreign degree equivalent to a Bachelor’s degree in the U.S. or Canada.

   And,

   A. Attend a mandatory information session prior to submitting application.
   B. Current application filled out to San Jacinto College before attending pre-enrollment meeting. If it has been longer than 1 year since you attended San Jacinto College, you must re-new your application online.
   C. Submit application with transcript, resume, and two letters of recommendation.
   D. Program faculty will call to schedule a personal interview.
      - All applicants will be asked to same questions by 2 DMS faculty members.
      - Applicants will be scored on a Likert scale based on their answers and preparedness for the program.
   E. The top 16 students will be selected. All students will be notified of their status by mid-July.
**Course Prerequisites**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>College Physics or Radiographic Imaging Equipment</td>
<td>3/2</td>
</tr>
<tr>
<td>Anatomy and Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1314 College Algebra (or higher)</td>
<td>3</td>
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<tr>
<td>PSYC 2301 General Psychology</td>
<td>3</td>
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<tr>
<td>ENGL 1301 Composition I</td>
<td>3</td>
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<tr>
<td>Speech</td>
<td>3</td>
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<td>Humanities or Fine Arts</td>
<td>3</td>
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<td><strong>Pre-requisite Total</strong></td>
<td><strong>21</strong></td>
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*Algebra, College Physics, English, and Anatomy & Physiology* courses must be completed **prior** to the beginning of the core curriculum of the diagnostic medical sonography program.

*Students must complete the Computer Literacy Skills Test at SJC or complete ITSC 1309 or BCIS 1305 **prior to acceptance** into the diagnostic medical sonography program to be deemed computer literate.

*All students **without** previous health care experience will be required to take the Certified Nurse Aide course offered though CPD. [http://cpd.sanjac.edu/node/7452](http://cpd.sanjac.edu/node/7452)*

**Students transferring from another DMS program**

Applicants may receive credit for previously passed sonography courses. The sonography coursework must have been completed with a grade of “B” or better at a regionally accredited institution of higher education. The previous sonography program must be accredited by CAAHEP. All sonography coursework will be evaluated by the program director. The coursework must be comparable to the SJCD sonography coursework. Additionally, the student must prove competency in any course consisting of a scanning lab by passing assigned lab exams. **All clinical courses must be completed at San Jacinto College.** Additional stipulations may be added by the program director.

Any student without previous health care experience may be required to take additional courses as deemed necessary by the program director. These courses include, but are not limited to, patient care, medical terminology, anatomy and physiology II and pathophysiology.
Curriculum

Course Prerequisites
College Physics or Radiographic Imaging Equipment 3/2
Anatomy and Physiology I 3
MATH 1314 College Algebra (or higher) 3
PSYC 2301 General Psychology 3
ENGL 1301 Composition I 3
Speech 3
Humanities or Fine Arts 3
Pre-requisite Total 21

*Algebra, Physics, English, and Anatomy and Physiology* courses must be completed prior to the beginning of the core curriculum of the diagnostic medical sonography program.

Semester 1
DMSO 1210 Introduction to Sonography 2
DMSO 1302 Basic Ultrasound Physics 3
DMSO 1441 Abdominopelvic Sonography 4
DMSO 1351 Sonographic Sectional Anatomy 3
Semester Total 12

Semester 2
DMSO 1361 Clinic I – Diagnostic Medical Sonography 3
DMSO 2405 Sonography of Obstetrics/Gynecology 4
DMSO 2353 Sonography of Superficial Structures 3
DMSO 1355 Sonographic Pathophysiology 3
DMSO 1342 Intermediate Ultrasound Physics 3
Semester Total 16

Semester 3
DMSO 2360 Clinic II – Diagnostic Medical Sonography 3
DMSO 2245 Advanced Sonographic Practices 2
DMSO 2342 Sonography of High Risk Obstetrics 3
DMSO 2243 Advanced Ultrasound Principles & Instrumentation 2
Semester Total 10

Semester 4
DMSO 2462 Clinic III – Diagnostic Medical Sonography 4
DMSO 1391 Special Topics in DMS 3
DMSO 2357 Advanced US Professionalism & Registry Review 3
Semester Total 10

Degree Total 72
Course Descriptions

DMSO 1210 Introduction to Sonography (2:2-0)
This is an introduction to the profession of sonography and the role of the sonographer. It emphasizes medical terminology, ethical/legal aspects, written and verbal communication, and professional issues relating to the registry, accreditation, professional organizations and history of the profession.

DMSO 1441 Abdominopelvic Sonography (4:3-3)
Normal anatomy and physiology of the abdominal and pelvic cavities as related to scanning techniques, transducer selection, and scanning protocols.

DMSO 1302 Basic Ultrasound Physics (3:3-1)
This course covers basic acoustical physics and acoustical waves in human tissue. This covers ultrasound transmission in soft tissue, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams.

DMSO 1351 Sonographic Sectional Anatomy (3:3-1)
This course covers sectional anatomy of the male and female body. Includes anatomical relationships of organs, vascular structures, and body planes and quadrants.

DMSO 2405 Sonography of Obstetrics/Gynecology (4:3-3)
Detailed study of the pelvis and obstetrics/gynecology as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

DMSO 1355 Sonographic Pathophysiology (3:3-1)
Pathology and pathophysiology of the abdominal structures visualized with ultrasound. Includes abdomen, pelvis, and superficial structures.

DMSO 1342 Intermediate Ultrasound Physics (3:3-1)
Continuation of Basic Ultrasound Physics. Includes interaction of ultrasound with tissues, mechanics of ultrasound production and display, various transducer designs and construction, quality assurance, bioeffects, and image artifacts. May introduce methods of Doppler flow analysis.

DMSO 2353 Sonography of Superficial Structures (3:3-0)
This course is a detailed study of normal and pathological superficial structures as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

DMSO 2342 Sonography of High Risk Obstetrics (3:3-1)
Maternal disease and fetal abnormalities. Includes scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

DMSO 2243 Advanced Ultrasound Principles and Instrumentation (2:2-1)
This course covers theory and application of ultrasound principles. Includes advances in ultrasound technology.

DMSO 2245 Advanced Sonography Practices (2:2-1)
This course covers exploration of advanced sonographic procedures and emerging ultrasound applications.

DMSO 2357 Advanced Ultrasound Professionalism and Registry Review (3:3-1)
This course covers sonographic professional principles and scope of practice including legal and ethical issues and department management procedures. Includes review and preparation.

DMSO 1391 Special Topics in Diagnostic medical Sonography (3:3-1)
This course addresses recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student.

DMSO 1361 Clinic I (192hrs), DMSO 2360 Clinic II (288hrs), DMSO 2462 Clinic III (384hrs)
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.
Technical Standards and Essential Functions
The sonography program has established technical standards and essential functions to ensure that students have the necessary abilities to participate in all aspects of the program. Students must meet the standards listed below. If a student fails to meet the outlined standards, he/she may be withdrawn from the program.

- **Observation Skills**: The functional use of visual, auditory, and somatic sensations to examine phenomena prior to analysis, diagnosis, or interpretation. The student must have the ability to participate in and comprehend all didactic, laboratory, and clinical demonstrations.

- **Communication Skills**: The imparting or interchange of thoughts, opinions, or information by speech, writing, or signs. The student must effectively communicate using verbal and non-verbal formats with faculty, students, patients and patients’ family, and all other members of the clinical healthcare team.

- **Motor Skills**: The ability to produce complex muscle and nerve movements. Students must possess the ability to lift 50+ pounds, push and pull stretchers, have full use of hands, wrist, and shoulders, and manually manipulate the transducer and control panel.

- **Critical Thinking Skills**: The mental capacity for acquiring and understanding information and appropriately applying to the decision making process; especially of a high or complex order. Students must be able to comprehend detailed information in the required textbooks and medical records. Students must have the ability to retain and apply learned information to real time situations.

- **Behavioral/Social Attributes**: The emotional health and mental stability required to make intellectual and mature decisions and exercise good judgment in the classroom, laboratory, and clinical setting. The student must be able to have a strong work ethic, tolerate large workloads in a fast paced area, function under stressful situations, adapt to changing environments, and maintain a professional behavior at all times.

4.2 ADA considerations
Qualifying individuals under the Americans with Disabilities Act guidelines who require reasonable accommodations should report to the ADA counselor. The counselor for the Central campus is Leander Nash (281) 476-1501 x1888, CADM250C.
**Tuition and Fee Schedule**

Subject to change by the Texas State Legislature and the San Jacinto Community College District Board of Trustees

You may pay online at www.sanjac.edu by credit or debit card, Installment Payment Plan (IPP), or by e-check. You can also apply for financial aid online.

Campus business offices are open from 8 a.m.–7 p.m., Monday–Thursday and from 8 a.m.–4:30 p.m., Friday.

**Resident In-district**

Tuition is $43 per credit hour plus a one-time per semester $140 general service fee. The general service fee is non-refundable unless you completely withdraw from the College.

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In addition to the tuition and fees above, other fees will be charged for applicable classes.

**Resident in Following Areas:**

Any legal resident of Texas living within the boundaries of the Pasadena, Deer Park, La Porte, Galena Park, Channelview or Sheldon Independent School Districts will be charged resident in-district tuition.

**Resident Out-of-District**

Tuition is $84 per credit hour plus a one-time per semester $140 general service fee. The general service fee is non-refundable unless you completely withdraw from the College. In addition to the tuition, other fees will be charged for applicable classes.

**Financial Aid**

There are lots of details involved with getting financial aid. Fortunately you’ve got us standing by to help you sort it all out. Our financial aid advisors have walked thousands of students through the process, and they’re ready to do the same for you. So you can get the aid you need and get on with your education.

Here’s where you can find us. [http://www.sanjac.edu/financial-aid](http://www.sanjac.edu/financial-aid)