

DIAGNOSTIC
MEDICAL
SONOGRAPHY



Clinical Manual
2024



Northwestern State University
Diagnostic Medical Sonography
Clinical Manual

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BACHELOR OF SCIENCE IN RADIOLOGIC SCIENCES (BSRS) PROGRAM MISSION

The mission of the Northwestern State University BSRS Program is to provide students with advanced knowledge and skills through guided experiences and clinical practice that culminate in the development of professional radiologic technologists and sonographers who become an integral part of the healthcare community and society.

DIAGNOSTIC MEDICAL SONOGRAPHY MISSION

The mission of the Northwestern State University Diagnostic Medical Sonography Program is to provide students with advanced knowledge and skills through guided experiences and clinical practice to produce entry-level sonographers eligible for registration by the American Registry of Diagnostic Medical Sonographers in Abdominal sonography, OB/Gyn sonography, and vascular sonography.

DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM GOALS

The DMS program goal is to prepare competent entry-level sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains for the following concentrations it offers: abdominal sonography-extended, obstetrics and gynecology sonography, and vascular sonography. Consistent with the mission statement, the specific goals and learning outcomes for the educational program are listed below:

GOALS	STUDENT LEARNING OUTCOMES
Students will be clinically competent sonographers.	<ul style="list-style-type: none">• Students will proficiently operate ultrasound equipment and select appropriate transducers for different exams.• Students will acquire high-quality diagnostic images using various sonographic techniques, such as B-mode, Doppler, and color flow imaging.• Students will perform quality sonographic exams.• Students will develop assessment skills of an imaging professional.
Students will demonstrate critical thinking and problem-solving skills.	<ul style="list-style-type: none">• Students will evaluate a clinical situation and perform accordingly using critical thinking skills.• Students will critically evaluate and assess challenges within the healthcare administrative setting.

GOALS	STUDENT LEARNING OUTCOMES
	<ul style="list-style-type: none"> • Students will accurately evaluate and report diagnostic findings.
<p>Students will demonstrate professionalism, ethical conduct, and adherence to standards in sonography practice.</p>	<ul style="list-style-type: none"> • Students will demonstrate an understanding of professional advocacy. • Students will integrate adherence to professional behaviors. • Students will demonstrate ethical conduct in the clinic and classroom settings.
<p>Students will demonstrate the ability to communicate effectively.</p>	<ul style="list-style-type: none"> • Students will demonstrate oral communication skills. • Students will demonstrate written communication skills.
<p>Students will be prepared to take national sonography registry exams.</p>	<ul style="list-style-type: none"> • Students will achieve a benchmark score of 80% on registry mock exams. • Students will achieve a C or better in registry review courses.

SONOGRAPHY CLINICAL EDUCATIONAL SITE CONTACT LIST

Clinical Education Setting	Address	Phone	Preceptors
Byrd Regional/Deer Creek	1020 Fertitta Blvd	337-239-5148	Laurashae B.
Christus Cabrini	3330 Masonic Dr., Alexandria, LA 71301	318-466-6102	Jordan F. Karen M. Koral J.
Christus Coushatta	1635 Marvel St., Coushatta, LA 71019	318-932-2103	Natalie G.
Christus Highland Medical Center	1435 East Bert Kouns, Shreveport, LA 71105 <u>Park in employee parking near the Cancer Center.</u> <u>Parking tag will be provided first day</u>	318-681-5675	Itoho'wo U. Tim T. Kayla W.
Christus Trinity Clinic	3311 Prescott Rd, Suite 410, Alexandria LA 71301	318-487-6060	Crystal R.
Desoto Regional	207 Jefferson Street, Mansfield, LA 71052	318-871-3108	Jessie B.
Minden Medical Center	1 Medical Plaza Pl, Minden, LA 71055	318-377-2321	Cydney C.
Natchitoches Regional	501 Keyser Ave, Natchitoches, LA 71457 <u>Park in the farthest parking lot from the hospital</u>	318-214-4588	Laura E. Koral J.
Ochsner St. Mary	1 St Mary Pl, Shreveport, LA 71105	318-626-4300	Jennifer L. Eloise J. Melody B.
Ochsner St. Mary's OBGYN Specialists	1 St. Mary Place, Suite 160, Shreveport, LA, 71101	318-626-2869	Jessica S. Kelly R.
Rapides Regional Medical Center	211 4 th St., Alexandria, LA 71301 <u>Park in the parking garage next to the outpatient center</u>	318-473-3567	Brian K. Danielle T. Halie B. Holly L. Terri B. Halle C.
Rapides Women's Health Center	501 Medical Center Dr. Suite 200, Alexandria, LA 71301	318-769-7000	Erica C. Jennifer P.
Sabine Medical Center	240 Highland Dr., Many, LA 71449	318-256-7480	Blake L.
VA Alexandria	2495 Shreveport Hwy, Pineville, LA 71360	318-473-2979 & 318-473- 2974	Melanie P.

Willis-Knighton Bossier	2400 Hospital Drive, Suite 340, Bossier City, LA 71111 <u>Park back from the thick white line</u>	318-212-7554	Sarah H.
Willis-Knighton Bossier Women's Health Specialists	2400 Hospital Drive Suite 400, Suite 340, Bossier City, LA 71111 <u>Park back from the thick white line</u>	318-212-7973	Megan H.
Willis-Knighton North	2600 Greenwood Rd. Shreveport LA, 71103 <u>Park back from the thick white line</u>	318-212-4643	Heather G.
Willis-Knighton Pierremont	8001 Youree Dr. Shreveport, LA 71115 <u>Park back from the thick white line</u>	318-212-3580	Terrance A. Chris B.
Willis-Knighton Pavillion	2449 Hospital Dr, Bossier City, LA, 71111	318-212-7581	Lashonda R.
Pierremont OBGYN Specialists	8001 Youree Dr. Suite 600, Shreveport, LA 71115 <u>Park back from the thick white line</u>	318-212-3890	Jessica A.
Willis-Knighton South	2510 Bert Kouns Industrial Loop, Shreveport, LA 71118 <u>Park back from the thick white line</u>	318-212-5165	Rhonda E.

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ULTRASOUND CONCENTRATION CURRICULUM

Northwestern State University Ultrasound Concentration Curriculum

Freshman Year

<u>Semester 1</u>	<u>Hours</u>	<u>Semester 2</u>	<u>Hours</u>
English 1010	3	English 1020	3
*Math	3	*Math	3
UNIV 1000	1	Allied Health 1020	2
*Behavioral Science	3	BIOL 2250, 2251	4
Science 1010	3	ALHE 2200	<u>2</u>
*History	<u>3</u>		14
	16		

Sophomore Year

<u>Semester 3</u>	<u>Hours</u>	<u>Semester 4</u>	<u>Hours</u>
BIOL 2260,2261	4	SONO 3320 (Found Sono & PC)	3
COMM 1010	3	SONO 3810 (Abd I /Lab)	4
Fine Arts 1040	3	English 2110	3
ALHE 2210 (Intro)	<u>3</u>	SONO 3300 SA/ lab	<u>3</u>
	13		13

<u>Semester 5</u>	<u>Hours</u>
SONO 3311 (Clinic I)	3
Social Science	<u>3</u>
	6

Junior Year

<u>Semester 6</u>	<u>Hours</u>	<u>Semester 7</u>	<u>Hours</u>
SONO 3900 (OB-GYN I /Lab)	4	SONO 3820 (SPI I)	3
SONO 3910 (Abd II)	3	SONO 4600 (OB-GYN II /Lab)	4
SONO 3811 (Clinic II)	3	SONO 3911 (Clinic III)	3
ALHE 3840	<u>3</u>	ALHE 4520	<u>3</u>
	13		13

<u>Semester 8</u>	<u>Hours</u>
SONO 4511 (Clinic IV)	4
SONO 4510 (Special Proc)	<u>3</u>
	7

Senior Year

<u>Semester 9</u>	<u>Hours</u>	<u>Semester 10</u>	<u>Hours</u>
SONO 4700 (Vascular/Lab)	4	SONO 4711 (Clinic VI)	5
SONO 3920 (SPI II)	3	SONO 4900 (Abd and Vasc. RR)	2
SONO 4611 (Clinic V)	3	SONO 4910 (OB/Gyn RR)	2
ALHE 4610	<u>3</u>	ALHE 4630	<u>3</u>
	13		12

SONOGRAPHY SCOPE OF PRACTICE AND CLINICAL STANDARDS

Sonography Scope of Practice

The scope of practice and clinical standards for the diagnostic medical sonographer can be found at: [SDMS Scope of Practice - Defining Sonography Standards](#)

Policy: 2023

CODE OF ETHICS FOR THE PROFESSION OF DIAGNOSTIC MEDICAL SONOGRAPHY

*Re-approved by SDMS Board of Directors, effective 02/08/2017
(originally approved by SDMS Board of Directors, December 6, 2006)*

PREAMBLE

The goal of this code of ethics is to promote excellence in patient care by fostering responsibility and accountability among diagnostic medical sonographers. In so doing, the integrity of the profession of diagnostic medical sonography will be maintained.

OBJECTIVES

- To create and encourage an environment where professional and ethical issues are discussed and addressed.
- To help the individual diagnostic medical sonographer identify ethical issues.
- To provide guidelines for individual diagnostic medical sonographers regarding ethical behavior.

PRINCIPLES

Principle I: In order to promote patient well-being, the diagnostic medical sonographer shall:

- A. Provide information to the patient about the purpose of the sonography procedure and respond to the patient's questions and concerns.
- B. Respect the patient's autonomy and the right to refuse the procedure.
- C. Recognize the patient's individuality and provide care in a non-judgmental and non-discriminatory manner.
- D. Promote the privacy, dignity and comfort of the patient by thoroughly explaining the examination, patient positioning and implementing proper draping techniques.

- E. Maintain confidentiality of acquired patient information, and follow national patient privacy regulations as required by the "Health Insurance Portability and Accountability Act of 1996 (HIPAA)."
- F. Promote patient safety during the provision of sonography procedures and while the patient is in the care of the diagnostic medical sonographer.

Principle II: To promote the highest level of competent practice, diagnostic medical sonographers shall:

- A. Obtain appropriate diagnostic medical sonography education and clinical skills to ensure competence.
- B. Achieve and maintain specialty specific sonography credentials. Sonography credentials must be awarded by a national sonography credentialing body that is accredited by a national organization which accredits credentialing bodies, i.e., the [National Commission for Certifying Agencies \(NCCA\)](#) or the [International Organization for Standardization \(ISO\)](#).
- C. Uphold professional standards by adhering to defined technical protocols and diagnostic criteria established by peer review.
- D. Acknowledge personal and legal limits, practice within the defined [scope of practice](#), and assume responsibility for his/her actions.
- E. Maintain continued competence through lifelong learning, which includes continuing education, acquisition of specialty specific credentials and recertification.
- F. Perform medically indicated ultrasound studies, ordered by a licensed physician or their designated health care provider.
- G. Protect patients and/or study subjects by adhering to oversight and approval of investigational procedures, including documented informed consent.
- H. Refrain from the use of any substances that may alter judgment or skill and thereby compromise patient care.
- I. Be accountable and participate in regular assessment and review of equipment, procedures, protocols, and results. This can be accomplished through facility accreditation.

Principle III: To promote professional integrity and public trust, the diagnostic medical sonographer shall:

- A. Be truthful and promote appropriate communications with patients and colleagues.
- B. Respect the rights of patients, colleagues and yourself.
- C. Avoid conflicts of interest and situations that exploit others or misrepresent information.
- D. Accurately represents his/her experience, education and credentialing.
- E. Promote equitable access to care.

- F. Collaborate with professional colleagues to create an environment that promotes communication and respect.
- G. Communicate and collaborate with others to promote ethical practice.
- H. Engage in ethical billing practices.
- I. Engage only in legal arrangements in the medical industry.
- J. Report deviations from the Code of Ethics to institutional leadership for internal sanctions, local intervention and/or criminal prosecution. The Code of Ethics can serve as a valuable tool to develop local policies and procedures.

Source: SDMS [Code of ethics](#)
Policy: 2023

ACCREDITATION

The Diagnostic Medical Sonography program at Northwestern State University has a site visit scheduled for pursuing initial accreditation by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org). This step in the process is neither a status of accreditation nor a guarantee that accreditation will be granted.

NATIONAL CERTIFICATION/ REGISTRY



American Registry for Diagnostic Medical Sonography

The American Registry for Diagnostic Medical Sonography® (ARDMS®) administers examinations and awards credentials in areas of ultrasound. Through its mission, ARDMS empowers sonographers to provide exceptional patient care through rigorous assessments and continual learning. To learn more about the credentialing examination, visit www.ardms.org.

NATIONAL CERTIFICATION EXAMINATION

Sonographic Principles and Instrumentation (SPI) Registry Examination

Students are eligible to take the Sonographic Principles and Instrumentation (SPI) registry examination given by the American Registry of Diagnostic Medical Sonography once they have successfully completed SONO 3920. To encourage success, students are required to take the SPI portion of the ARDMS national boards during the program as a requirement of the SPI course. For those students who do not pass on their first attempt, a plan and timeline for review support and reexamination will be developed based on the exam score and student learning style. The ARDMS requires 60 days before retaking the exam after a failed attempt, but scheduling of the exam can be done after three days.

Registered Diagnostic Medical Sonographer (RDMS) Examination & Registered Vascular Technologist Examination

Students who successfully complete the BSRS with Ultrasound Concentration program or the Ultrasound Post-Baccalaureate program may be eligible to take the national certification examinations in Abdomen, OB/GYN, and Vascular offered by the American Registry of Diagnostic Medical Sonographers (ARDMS). Successful completion of this program does not guarantee the student is eligible to take these examinations. The ARDMS reviews the applications and determines eligibility for the examinations.

A past criminal record may prohibit eligibility. Questions regarding eligibility should be directed to the ARDMS office (Phone: 800-541-9754). For more information, please visit [Compliance Pre-determination Application - ARDMS](#).

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PROFESSIONAL ORGANIZATIONS

Society of Diagnostic Medical Sonographers (SDMS)

The Society of Diagnostic Medical Sonography (SDMS) is a professional membership organization founded in 1970 to promote, advance, and educate its members and the medical community in the science of diagnostic medical sonography. The SDMS is the largest association of sonographers and sonography students in the world. [SDMS](#)

American Institute of Ultrasound in Medicine (AIUM)

The American Institute of Ultrasound in Medicine (AIUM) creates opportunities for passionate medical professionals to improve their knowledge and use of ultrasound in the diagnosis and treatment of patients. Through rigorous research, high-quality education, accreditation, and evidence-based training and practice resources, the AIUM is leading the global multidisciplinary ultrasound community. [AIUM](#)

CLINICAL FEES AND OBLIGATIONS

As a clinical student at Northwestern State University, students have various clinical fees and obligations. These fees include, but are not limited to, the following:

Clinical Fees:

Background investigations ~\$40

Clinical rotations and travel- varies

Drug screening varies according to the facility

Health form varies according to the facility and the student

iPads-\$500

Parking fees

Trajecsys-\$150 total

Tuition: The most recent information regarding tuition can be found at:

<https://www.nsula.edu/futurestudents/nsu-tuition-and-fees/>

Ultraling- \$100 per semester

Additional fees:

Annual flu shots-~\$25 per year

Books-~\$900 the first semester

CPR-~\$40 for class and ~\$20 for book

Lab fees-\$50 per semester

Professional degree fees-\$300 for 5 semesters

Registry review materials and organization membership ~\$400

Registry exams \$1075

Others- \$320

*All fees are approximate and subject to change.

Upon clinical admission, students are obligated to complete a health form, a drug screening, and a background investigation prior to attending clinical assignments at area hospitals and clinics. The cost of completion of the health form and drug screening will vary according to your health insurance. Students are also required to have annual immunizations to attend clinical education settings. Any costs pertaining to these obligations are the responsibility of the student.

Students will be required to purchase uniforms. These items are part of the professional attire for the clinical education setting. See BSRS program policies for more detailed information.

Students may be required, on occasion, to attend various clinic rotation shifts including evening and early morning clinical assignments based on clinical education setting. Other clinic rotation shifts may include 10-hour shifts. The Sonography Program at Northwestern State University utilizes many clinical education settings in north and central Louisiana. At times, a student may be required to travel more than 65 miles from the Natchitoches campus for a clinical assignment. Any costs pertaining to traveling to and from a clinical education setting are the responsibility of the student.

The School of Allied Health is located on Northwestern State University's Shreveport campus, and the sonography program is housed on the Natchitoches campus. Students may be required to travel to the Shreveport or Alexandria campus as needed for official events, and students attending clinicals on the Shreveport and Alexandria campuses may be required to travel to Natchitoches for official events/meetings/functions.

As a student in the clinical portion of the Radiologic Sciences degree program, students are charged an additional fee of \$300 for SONO 3311, 3811, 3911, 4511, and 4611. This fee is known as a Professional Degree Fee. This fee is established to help cover the cost of the clinical portion of the curriculum.

Policy: 2024

CLINICAL EDUCATION SETTING POLICIES AND PROCEDURES

CLINICAL OBLIGATIONS

Clinical experience provides a unique opportunity to interact with real patients in various medical imaging settings. Prior didactic and Scan Lab education prepares the student for the clinical experience. Working in the real clinical environment with the direct supervision of qualified professionals requires special policies and procedures throughout the clinical course.

Students enrolled in the professional phase (clinical) courses of the Diagnostic Medical Sonography Program are assigned to area hospitals and clinics that serve as Clinical Education Settings (CES). The Clinical Coordinator makes clinical assignments on a semester basis. Course assignments, including both clinical and didactic courses, shall not exceed 40 hours/week or 10 hours/day unless the student voluntarily arranges or schedules additional contact time. Students may be required to travel more than 65 miles from campus to a clinical education setting. Travel to class and clinical affiliates is the student's responsibility. It is the students' responsibility to arrange transportation to all assigned sites. These experiences provide students with a variety of clinical environments for possible future employment decisions.

While assigned to the CES, the student will rotate through the various areas of the Ultrasound Department. Clinical rotation assignments take place during daytime hours, Monday through Friday. Clinical rotation assignments are given to each student at the beginning of each semester and posted at each CES. Students are not permitted to attend clinic in an area they are not assigned. Also, students are not allowed to attend clinic beyond their scheduled time, without prior approval from the program director.

SONOGRAPHY REQUIRED CLINICAL ROTATIONS

- *Diagnostic Medical Sonography (Abdomen and Abdomen Extended)*
- *Gynecologic and Obstetric Ultrasound*
- *Vascular Ultrasound*

Once the student has completed all the required competencies for the program, the student may rotate through an elective specialty area of interest.

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SONOGRAPHY CLINICAL OBJECTIVES

Critical Thinking and Problem-Solving: Developing the ability to think critically, troubleshoot technical challenges, and adapt to different patient scenarios is important for successful ultrasound practice.

Image Acquisition and Technique: Learn the principles of ultrasound physics and instrumentation, including how to properly operate ultrasound equipment, adjust settings, and optimize image quality for different types of examinations.

Anatomy and Pathology: Develop a strong understanding of human anatomy relevant to the area they are specializing in (abdominal, OB/GYN, vascular etc.). This includes recognizing normal anatomy as well as common pathological conditions.

Patient Care and Communication: Gain effective communication skills, patient positioning, and ensuring patient comfort and safety during procedures.

Image Interpretation: Identify potential anomalies, artifacts, and recognize indicators of specific pathologies.

Clinical Procedures: Perform various types of ultrasound examinations, such as abdominal, obstetric, vascular etc. This involves understanding the specific protocols for each type of exam and performing them accurately.

Instrumentation and Equipment Maintenance: Maintaining and troubleshooting ultrasound equipment to ensure it is properly functioning.

Medical Ethics and Legal Considerations: Practice ethical and legal considerations related to patient confidentiality, informed consent, and professional behavior.

Quality Control and Assurance: Perform quality control practices to ensure consistent and accurate ultrasound images, including monitoring and evaluating the quality of their own work.

Patient Record Keeping: Record accurate and comprehensive patient data and exam findings that are crucial for continuity of care and collaboration with other healthcare professionals.

Professional Development: Recognizing the need for ongoing learning and staying updated with advancements in ultrasound technology and techniques. Gain awareness of the importance of continuous learning and staying updated with advancements in the field. This could involve attending workshops, conferences, and pursuing certification.

Safety Protocols: Learn safety guidelines to prevent potential hazards associated with exposure to ultrasound energy.

Team Collaboration: Work as part of a larger healthcare team, learn effective communication and collaboration with physicians, nurses, and other healthcare professionals.

CLINICAL SUPERVISION & SONOGRAPHY PROCEDURES

Sonography students are prohibited from independently scanning patients, other students, or staff members without direct or indirect supervision from a clinical instructor or sonographer in the clinical setting.

Clinical instructors shall be responsible for overseeing and guiding sonography students during scanning procedures.

Terms and policies regarding clinical procedure and supervision are outlined in each clinical course syllabus. During the professional curriculum, the students are under supervision of a registered sonographer who serves as their clinical instructor. Once a student has successfully performed a specific competency evaluation, they are under the instructor's indirect supervision.

Regardless of the level of supervision or competency, All students' sonographic images **MUST** be approved by a registered clinical sonographer. Policies on students initializing studies will vary between departments, however, students should always adhere to these policies and identify their images appropriately (student initials or "STU" etc.)

Students must **always** check with the sonographer to see that all images have been acquired and that all necessary information has been communicated to the patient before allowing them to leave the department after their exam.

Direct Supervision

*Must occur for students **before** documented competency of any procedures.

The clinical instructor will:

- Review patient's requisition in relation to the student's achievement.
- Evaluate the condition of the patient in relation to the student's knowledge.
- Be present during the examination.
- Review and approve the images within the study.

Indirect Supervision

*Only permitted for students **after** documentation of competency for any given procedure.

The clinical instructor will:

- Review, evaluate, and approve the ultrasound study as indicated above and is immediately available to assist students regardless of student achievement.

The technologist or sonographer is responsible for reviewing and approving images and releasing images to PACS.

Students will be subject to dismissal from the program if this policy is not strictly followed.

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DEVELOPING CLINICAL PROFICIENCY

Clinical skills can be developed by following a systematic step-by-step approach. The following sequence of steps will generally produce outstanding technologists:

- **Academic Preparation**
 - **Observation**
 - **Scan with Assistance from a Registered Sonographer**
 - **Pre/Back Scan with a Registered Sonographer**
 - **Perform Competency Evaluation**
1. **Academic Preparation:** This step is completed by studying sonographic principles and instrumentation, sonographic principles and techniques, anatomy and physiology, normal and pathologic sonographic appearance of the abdomen, small parts, obstetrics, gynecology, and vascular, etc., in the didactic coursework.
 2. **Observation:** The initial activities in the hospital will consist of observing registered sonographers at work.
 3. **Scan with Assistance from a Registered Sonographer:** As Students develop confidence and proficiency, they will be allowed to complete entire examinations under the direct supervision of a registered sonographer. The sonographer will observe and assist students as the need arises.
 4. **Pre/back Scan with a Registered Sonographer:** Once students feel comfortable in the exam room, they will be given an opportunity to practice scanning with the guidance of a registered sonographer.
 5. **Perform Competency Evaluation:** Once a student feels certain they can perform a particular examination by themselves, they may ask the Clinical Instructor to do a competency evaluation. Prior to beginning a competency exam, the student is required to request the clinical instructor to fill out a written Clinical Competency form. Following the performance evaluation, the clinical instructor will record the evaluation in Trajecsys. Successful attainment of competency will fulfill the requirement for the semester, while any unachieved competencies must be repeated until proficiency is shown.

All competencies may be reevaluated by the Clinical Coordinator or NSU faculty for quality and completeness. The final approval of competency evaluations will be by the Clinical Coordinator or NSU faculty, regardless of prior approval by a Clinical Instructor.

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DMS PROGRAM COMPETENCIES

REQUIRED COMPETENCIES:

ABDOMEN & SUPERFICIAL STRUCTURES

- Abdominal Complete
- Abdomen Limited/ RUQ
- Aorta
- Kidneys/Bladder
- Testicular (Scrotum)
- Thyroid
- Non-Cardiac Chest
- Invasive procedures

OBSTETRICS/GYNECOLOGY

- Pelvic Transabdominal
- Pelvic Transvaginal
- OB 1st Trimester
- OB 2nd Trimester Mat Pelvis
- OB 2nd Trimester Head/Face
- OB 2nd Trimester Abd/AFI
- OB 2nd Trimester Chest/Heart
- OB 2nd Trimester Ext/Spine
- OB 3rd Trimester Mat Pelvis
- OB 3rd Trimester Head/Face
- OB 3rd Trimester Abd/AFI
- OB 3rd Trimester Chest/Heart
- OB 3rd Trimester Ext/Spine
- Biophysical Profile

VASCULAR

- Venous Lower Extremity
- Venous Upper Extremity
- Arterial Lower Extremity
- Carotid Doppler
- Lower extremity venous insufficiency testing)
- Aortoiliac Duplex
- Ankle Brachial Indices (ABI)

In addition to the transvaginal, obstetrical, and scrotal competencies required for graduation, students are required to document direct scanning of 10 additional

transvaginal and obstetrical examinations along with an additional 5 scrotal examinations.

All required competencies listed above must be completed prior to graduation.

DMS MASTER COMPETENCY FORM

Northwestern State University Sonography Program - Clinical Competencies							
Module 1 (Required)	SONO 3311 (C1)	SONO 3811 (C2)	SONO 3911(C3)	SONO 4511(C4)	SONO 4611(C5)	SONO 4711 (C6)	Total:
Abdomen Complete							
Abdomen Limited/ RUQ							
Aorta							
Kidneys/Bladder							
Testicular (Scrotum)							
Thyroid							
Pelvic Transabdominal							
Pelvic Transvaginal							
OB 1st Trimester							
OB 2nd Trimester Mat Pelv.							
OB 2nd Trimester Head/Face							
OB 2nd Trimester Abd/AFI							
OB 2nd Trimester Chest/Heart							
OB 2nd Trimester Ext/Spine							
OB 3rd Trimester Mat Pelv.							
OB 3rd Trimester Head/Face							
OB 3rd Trimester Abd/AFI							
OB 3rd Trimester Chest/Heart							
OB 3rd Trimester Ext/Spine							
Biophysical Profile							
Non Cardiac Chest (pleural)							
Invasive Procedure							
Aortoiliac Duplex							
Ankle Brachial (ABI)							
Arterial (Lower)							
Carotid							
Lower Ext. Venous (LEV)							
Upper Ext. Venous (UEV)							
Venous Insufficiency							
Semester Total:							
PROGRAM REQUIRED	0	5	4	8	8	4	29

DMS PROGRAM PROFICIENCIES

Sonography proficiencies may be completed in the clinical setting or the lab setting.

VASCULAR SONOGRAPHY PROFICIENCIES

- Upper Extremity Arterial (UEA)
- Vessel Mapping
- Transcranial Doppler (TCD)
- Upper Extremity Photoplethysmography (PPG)
- Lower Extremity Photoplethysmography (PPG)
- Lower Extremity Exercise Stress Testing
- Palmar Arch
- Manual Ankle-Brachial Index (ABI) (also a comp)
- Visceral Vascular Imaging: Hepatic Doppler
- Visceral Vascular Imaging: Mesenteric Doppler
- Renal Doppler

ABDOMINAL SONOGRAPHY PROFICIENCIES

- GI Tract: Appendix

GRADING PROCEDURES FOR CLINICAL SONOGRAPHY COURSES

The grade requirements for each clinical course are stated in course syllabi and posted in the current semester course management shell. The weighted grade categories and assignment values are detailed for each clinical level. Grade requirements include JRC-DMS specified list of clinical procedures (clinical competency requirements), logging of clinical exams, sonographer evaluations, faculty evaluations, and complete relevant coursework (didactic requirements) for diagnostic medical sonography discipline. Additional clinical grade information can be found in the clinical course syllabus.

Initially, exam signoffs (skills checkoffs) will be performed. These signoffs provide a foundation for students to build on as they progress through the early clinical experience. These sign-offs are required for a specific skill or scan and must be completed prior to advancing toward competency for that exam. More information about exam signoffs will be provided in the clinical course syllabus.

Competency is gained through consistent and diligent work and not obtained after a certain number of patient exams or grades. Students will have an assigned number of competencies each semester. These competencies will be outlined in the course syllabus. According to the JRC-DMS 2011 Standard III.B.5.b.2, "Clinical instructors must have the appropriate credential in the concentration(s) for which they evaluate student performance and document required clinical competencies." Therefore, all clinical assessments must be completed by appropriately credentialed sonographers.

The minimum competency requirements are stated on the master competency form as posted in Moodle. This form should be used as a guide and is recommended that students use this form to unofficially keep up with their attempted competencies. These minimum requirements are necessary for establishing a grading system and are not meant to be restrictive. Students should request an evaluation on any examination they feel prepared to perform, even if they have completed their requirements for the semester. Competency evaluations completed over the minimum requirements will be counted in the current semester. All required competency evaluations must be completed by the last day of clinical. If the student does not meet the minimum competency requirements for a semester, the student will meet with the clinical coordinator. The consequences for not completing the minimal competency requirements can include receiving an incomplete for the semester, not progressing to the next semester, and failing the course.

Competencies should be turned in weekly and no later than the end of each rotation. Competencies need to be submitted in enough time to allow faculty to review at the various clinical sites. Submitting competencies in a timely manner is important for faculty to determine both midterm and final grades. Competencies that are not turned in during the current semester will not be accepted.

It is important to emphasize that this is a competency-based system, and the pace or rate of the student's progress is dependent on the student's ability to comprehend and perform the various examinations. The competency requirements are based on the JRC-DMS standards.

Policy: 2023

SONOGRAPHY MANDATORY CLINICAL SUPPLIES

The following is a list of items the student is required to carry to clinic *each* day:

- Photo Identification Badge for University **AND** Clinical site (if provided)
- Pen/Pencil
- Pocket Sized Notepad (or small notebook)
- Clinical Binder (provided) to include:
 - Clinical Schedule
 - Clinical Site Contact List

- Competency List
- Evaluation Reminders
- Competency forms
- Equipment Orientation Checklists
- Scanning Protocols
- Exam/pathology log sheets

Clinical instructors will check for these items. If the student does not have these items at the time of the clinical instructor's inquiry, the student will be subject to disciplinary action.

Books and Bags

Due to infection control policies in clinical education settings, students can have only one book and one notebook. Backpacks, briefcases, and other bags are not permitted in the clinical education setting. This will also ensure the safety and security of your personal items. This policy will be strictly enforced. Disciplinary action will follow if the rule is not followed.

Policy: 2023

EVALUATION OF PROGRAM EFFECTIVENESS (CLINICAL DOCUMENTATION)

Various methods are utilized for evaluating the program's effectiveness. Feedback from students regarding didactic and clinical courses is routinely gathered using online surveys. These surveys are especially important. Students should expect routine requests to complete these important surveys throughout their time in the program. Honest feedback is strongly encouraged.

Student Course Evaluation: Evaluation of faculty performance by the student is conducted at the end of each semester and periodically, as necessary. Evaluations are made of teaching effectiveness, organization, and accessibility. Student course evaluations provide important feedback for assessing faculty performance.

Clinical Site Evaluation: Students have the responsibility to assist the program in monitoring the effectiveness of the clinical sites. At the end of each rotation, students will evaluate their clinical site. Student input provides necessary feedback to enhance or improve the program's relationship with the clinical sites. This tool is also an excellent opportunity to recognize individual staff members for contributions to the educational experience.

Sonographer Evaluation: Sonographer evaluations will be conducted at the end of each clinical rotation. These evaluations are necessary at various milestones within the curriculum to assess whether the needs of the students are being met throughout the educational experience. Each survey collects valuable information used by the program

for its continuous improvement. Candid feedback is encouraged to assist in programmatic review and ongoing improvement.

Graduate and Employer Surveys: The Diagnostic Medical Sonography (DMS) Program accreditor, CAAHEP, requires reporting of outcomes and achievement of designated benchmarks. Feedback from graduates and their employers within the first year of graduation is a valuable tool in program assessment. Graduates will be expected to provide necessary information to enhance or improve the program for future students. Also, graduates are strongly encouraged to convey the survey's importance with feedback to their employer.

Policy: 2023

VENIPUNCTURE

Venipuncture is a procedure commonly performed in the Clinical Education Setting. Students enrolled in Clinical Sonography courses are permitted, under supervision*, to perform venipuncture and/or injections on patients. This practice is required as a clinical patient care competency checklist. Students are given the theory of venipuncture in lectures and the opportunity to practice venipuncture on patient simulators in a controlled lab situation. However, it will be listed as an optional competency. Students are not allowed to perform the competency until after the theory and practice sessions have been completed.

If the student is not performing the venipuncture, they should assist by setting up the procedure and handing supplies to the qualified individual performing the injection.

*Supervision of students must be by an ARRT registered radiographer, registered sonographer, licensed RN, or licensed MD approved to perform venipuncture by the CES. The supervisor must be present in the room during the procedure.

Policy: 2023

OUTSIDE EMPLOYMENT

Students who gain employment in a sonography position at any other medical facility while enrolled in the NSU Sonography Program are in no way acting under the supervision of the program while carrying out responsibilities related to their employment, and they will not receive any clinical credit for examinations or hours performed while clocked in as an employee. Students are not to wear their NSU scrubs while working as an employee for a clinical affiliate.

Students employed in other departments within an NSU clinical affiliated hospital such as any modality in Radiology, Lab, Admitting, Nursing etc., may **NOT** perform these job duties while clocked in for their NSU Sonography clinical assignment. **Students are never permitted to be clocked in for their job with the affiliated clinical site while also clocked in for the NSU Sonography program clinical assignment.**

Additionally, under no circumstances will a current sonography student hired by an affiliated clinical site stand in as a preceptor or supervise an NSU Sonography Program student on clinical assignment. Students may not, under any circumstances, receive pay or compensation of any kind for clinical assignments.

Students found in violation of the outside employment policy will be subject to disciplinary action, up to and including dismissal from the Sonography program.

Policy: 2023

PREGNANCY POLICY

If a student suspects she is pregnant while enrolled in the program, she may notify the Clinical Coordinator or Program Director. **Pregnancy notification is strictly voluntary**, but it is strongly recommended so that measures can be taken to protect the unborn child. If a student decides to declare her pregnancy, she must complete the **Pregnancy Notification form**.

If the student declares a pregnancy, she must work with the Program Coordinator and Clinical Coordinator to develop a plan that may include strategies and timings for completion of course or program requirements

The Sonography program may communicate with the clinical education setting regarding the declared pregnancy.

For a declared pregnancy, the student may choose one of the following options:

1. Remain in the DMS Program Without Disruption

It is possible for a pregnant student to continue and successfully complete the academic courses with little disruption. The college will not assume any liability for students who choose to continue with all didactic and clinical requirements without interruption. The student may remain in the program under the following conditions:

- a. The student may choose to complete all rotations with the approval of their physician (official letter required).
- b. The student must sign a form releasing the college and its affiliates of any liability associated with the possibility of fetal damage.
- c. The student will adhere to all Sonography program requirements including but not limited to standards for satisfactory progress, attendance for classes and clinical rotation, and The CONSAH Essentials and Technical Standards.

2. Voluntary Withdrawal in Good Standing

A pregnant sonography student may choose to take a leave of absence at any point in their pregnancy. The terms for leave of absence and readmission are stated in the Readmission Policy.

- a. Students who voluntarily withdraw because of pregnancy must initiate the medical return to campus process to be considered for program reentry and program progression. The student must contact the Student Health Services Coordinator regarding how to obtain a “Return to Class and Clinic Form.”

Students may withdraw the declaration of pregnancy at any time after discussing all options. Withdrawal of the notification must be submitted in writing to the Program Coordinator and Clinical Coordinator.

This pregnancy policy aligns with Title IX of the Education Amendments of 1972, which prohibits discrimination based on sex, including pregnancy and parental status, in educational programs and activities. For more information on Title IX, students can refer to the university’s handbook or visit the university’s Title IX website at [this link](#).

The program emphasizes the importance of proper safety for all students. Neither the University nor the Clinical Education Setting will be responsible for injury to the student or the embryo/fetus if the student chooses to continue in the program during pregnancy.

Policy: 2024

BSRS-Sonography Pregnancy Notification Form

I, _____, am <i>voluntarily</i> notifying a Program Official of my pregnancy on _____.	
Print Name	Date
My estimated gestation period is _____ weeks.	
My estimated due date is _____.	
(Month) (Day) (Year)	

I have read and agree to abide by the pregnancy policy in the BSRS Sonography Student Clinical Manual, and do agree to take personal responsibility for the safety and protection of my unborn child.	
Student Signature	Date

I, the undersigned, realize that neither the University, its faculty, nor the Clinical Setting will be responsible for injury to myself or the embryo/fetus since I am continuing in the program during my pregnancy.

Student Signature	Date

I will continue in the program without modification.

Student Signature	Date

I will continue in the program following the recommendations of the program.

Student Signature	Date

Written Withdrawal of Declaration

I wish to withdraw my declaration of pregnancy.

Student Signature	Date

SCAN LAB POLICIES AND PROCEDURES

FAIR PRACTICES AND INFORMED CONSENT

Before any scanning procedure, written informed consent must be obtained from the individual. The consent form should clearly explain the purpose of the scan, potential risks, and the student's limited experience. The scanning should only proceed once the individual provides informed consent voluntarily. All individuals being scanned, including students, sonographers, and volunteers, have the right to privacy and confidentiality. Personal health information must be handled with strict adherence to privacy regulations and institutional policies.

Students will scan other students and volunteers in the lab for a grade during scheduled lab time. Participation/non-participation by the sonography students as a scan lab model or volunteer does not bear weight on the student's grade or evaluation in the sonography program. In the event that a student does not wish to be scanned at any time, they may choose to opt-out and the student's grade will not be affected.

Any violations of this policy may result in disciplinary actions, including verbal counseling, written warnings, suspension from clinical training, or expulsion from the ultrasound program, depending on the severity and frequency of the offense.

By implementing this policy, we aim to create a safe and supportive learning environment.

Policy: 2023

STUDENT AND VOLUNTEER SONOGRAPHY SCAN LAB MODEL CONSENT POLICY

Student Scan Model Policy

As part of learning sonography application skills, the sonography scan lab is designed to allow students to practice scanning each other. Sonography images are obtained by using ultrasound frequencies for the imaging of the body and organs for educational and quality assurance purposes only. To allow for the maximum use of the equipment and time allowed for practice in the scan lab, the students will be required to scan and be asked to serve as a scan model as part of the sonography lab instruction time.

Students will be given a Scan Lab Consent Form that will allow permission for other students to practice scanning on them. In the event that a student does not wish to be scanned, they may choose to opt-out at any time and their grade will not be affected.

Scheduled lab time will consist of students scanning other students and volunteers for practice and for lab grades. Participation/non-participation by the sonography students

as a scan lab model or volunteer does not bear weight on the student's grade or evaluation in the sonography program. Student volunteers understand all the following:

- Sonography students and NSU staff that assist in the imaging process may have access to my health information.
- There is no current data to indicate any adverse biological effects resulting from diagnostic ultrasound. However, we practice ALARA by limiting the amount of time scanning the same scan model.
- Sonography students and faculty will not at any time discuss any findings or incidental findings with anyone other than sonography students and faculty.
- The sonography images that are obtained in the scan lab are for education or quality assurance purposes only. The students performing the sonographic procedure are not qualified for the diagnosis of sonography exams. The images obtained will be assessed to determine image quality, not to identify clinical abnormalities or for any other diagnostic or therapeutic purposes.
- Students may not hold Northwestern State University, NSU faculty, or fellow students responsible for failure to identify any clinical abnormalities. Should any abnormalities be discovered, Northwestern State University and its affiliated entities and staff are not responsible for any health care and/or medical expenses that may result from the finding. If an incidental finding is discovered, the student and/ or faculty that discovered the finding will follow the incidental finding policy and protocol.

Sonography students will be scanning and be a scan model for exams that cover the following body areas:

Abdominal
Pelvis

Neck
Obstetrics

Lower Extremity
Upper Extremity

NSU SONOGRAPHY PROGRAM STUDENT SCAN LAB MODEL CONSENT FORM

I have read and understand the statements published by Northwestern State University addressing the use of diagnostic ultrasound. I understand there is no current data to indicate any adverse biological effects resulting from diagnostic ultrasound.

I consent to participating as a model for exams that cover the following body areas:

Abdominal
Pelvis
Lower Extremity

Neck
Obstetrics
Upper Extremity

I understand that my involvement in these activities is voluntary and that I may withdraw my consent at any time. I understand that participation/non-participation by the sonography me as a scan lab model or volunteer does not bear weight on my grade or

evaluation in the sonography program. Grades are based on the criteria published in the syllabi.

As a current sonography student, I understand that other sonography students, the NSU staff that assist in the imaging process and the administration of the ultrasound program may have access to my health information.

I also understand that the ultrasound exams are being performed for education or quality assurance purposes only. I understand that the person performing the sonographic procedure is not qualified to provide a diagnosis of ultrasound exams. The images obtained will be assessed to determine image quality, not to identify clinical abnormalities or for any other diagnostic or therapeutic purposes.

I agree that NSU Sonography Program and its affiliated entities and staff will not be held responsible for failure to identify any clinical abnormalities. I agree that, should any abnormalities be discovered, Northwestern State University and its affiliated entities and staff are not responsible for any health care and/or medical expenses that may result from the finding. If an incidental finding is discovered while practicing in the scan lab, the Incidental Finding Policy will be implemented.

By signing below, I acknowledge that I have read and agree to all the above and that the proposed Ultrasound imaging examinations have been satisfactorily explained to me. I understand that this consent is valid for the duration of the NSU sonography program. Authorization and consent as a scan model allow the use of ultrasound frequencies for the imaging of my body and organs for educational and quality assurance purposes only.

- I agree to be a model for scanning: there will be no effect on my grades.
- I opt out of being a scan model for scanning: there will be no effect on my grades.

Student Name (Please Print)

Student Signature

Date

Volunteer Scan Model Policy

As part of learning sonography application skills, the sonography scan lab is designed to allow students to practice scanning each other. Sonography images are obtained by using ultrasound frequencies for the imaging of the body and organs for educational and quality assurance purposes only. This policy aims to ensure the safety, privacy, and educational experience of volunteers, while adhering to legal and ethical standards. This policy applies to all volunteers participating in the Sonography Student Scan Lab. Volunteers understand all of the following:

- Volunteers must sign the NSU sonography volunteer consent form

- Sonography students and NSU staff that assist in the imaging process may have access to my health information.
- There is no current data to indicate any adverse biological effects resulting from diagnostic ultrasound. However, we practice ALARA by limiting the amount of time scanning the same scan model.
- Sonography students and faculty will not at any time discuss any findings or incidental findings with anyone other than the volunteer, sonography students, and faculty.
- The sonography images that are obtained in the scan lab are for education or quality assurance purposes only. The students performing the sonographic procedure are not qualified for the diagnosis of sonography exams. The images obtained will be assessed to determine image quality, not to identify clinical abnormalities or for any other diagnostic or therapeutic purposes.
- The scanning of volunteers will be supervised by a certified sonographer or faculty during scanning activities.
- Volunteers may not hold Northwestern State University, NSU faculty, or fellow students responsible for failure to identify any clinical abnormalities. Should any abnormalities be discovered, Northwestern State University and its affiliated entities and staff are not responsible for any health care and/or medical expenses that may result from the finding. If an incidental finding is discovered, the student and/ or faculty that discovered the finding will follow the incidental finding policy and protocol.

Volunteers will serve as a scan model for exams that cover the following body areas:

- Abdominal
- Pelvis
- Lower Extremity
- Upper Extremity
- Neck
- Cardiac
- Obstetrics

VOLUNTEER SCAN LAB MODEL CONSENT FORM

I have _____ read and understand the statements

Please Print

published by Northwestern State University addressing the use of diagnostic ultrasound. I understand there is no current data to indicate any adverse biological effects resulting from diagnostic ultrasound.

I consent to participating as a model for exams that cover the following body areas:

Abdominal	Pelvis	Cardiac
Lower Extremity	Upper Extremity	
Neck	Obstetrics	

I understand that my involvement in these activities is voluntary and that I may withdraw my consent at any time. I understand that sonography students, the NSU staff that assists in the imaging process and the administration of ultrasound program may have access to my health information.

I also understand that the ultrasound exams are being performed for education or quality assurance purposes only. I understand that the person performing the sonographic procedure is not qualified in the diagnosis of ultrasound exams. The images obtained will be assessed to determine image quality, not to identify clinical abnormalities or for any other diagnostic or therapeutic purposes.

I agree that NSU Sonography Program and its affiliated entities and staff will not be held responsible for failure to identify any clinical abnormalities. I agree that, should any abnormalities be discovered, Northwestern State University and its affiliated entities and staff are not responsible for any health care and/or medical expenses that may result from the finding.

If an incidental finding is discovered while practicing in the scan lab, the Incidental Finding Policy will be implemented.

By signing below, I acknowledge that I have read and agree to all the above and that the proposed Ultrasound imaging examinations have been satisfactorily explained to me. I hereby give authorization and consent to the use of ultrasound frequencies for the imaging of my body and organs for educational and quality assurance purposes only. I understand that this consent is valid for any time that this individual volunteers as a scan model for the NSU sonography scan lab.

Volunteer Signature

Date

SONOGRAPHY INCIDENTAL FINDINGS POLICY

An incidental finding is defined as a previously undiagnosed medical condition that is discovered unintentionally during an evaluation. The finding may either be known by model or unknown/unexpected by model.

Types of Incidental Findings

Normal

- No or minimal impact on the health of the student/model.
- Anatomical variants
- Physiological conditions
- Incidentalomas- hemangiomas, fibroids, etc.

Significant

- Potential to affect the health of the model.
- Heart conditions- ASD, A fib
- Gallstones, renal calculi
- Minimal blockage in an artery

Emergent

- Life threatening condition where immediate attention is needed for the student/model.
- Heart conditions- embolic conditions, post MI, VSD
- Deep vein thrombosis
- Impending miscarriage

Incidental Finding Protocol

In the event that an incidental finding is discovered, the student will adhere to the following guidelines.

- No diagnosis is provided to model.
- The student will notify the supervising sonographer.
- Students will not convey any findings to model.
- Model will be notified in private, away from other students.
- The program coordinator is made aware of any findings and will provide appropriate guidance for emergent findings.
- An incidental finding form will be completed by the supervising sonographer and the model may be advised to see their personal physician. Northwestern State University sonography program is not responsible or liable for any costs or results associated with a model seeking medical evaluation or care based on the referral.
- The form is reviewed in private with the model. The model will be provided with a copy and a copy kept at school.
- For normal/ significant findings: model will be asked if they want to continue.
- For emergent findings, scanning immediately stops and appropriate emergency protocol will be implemented.

Emergent Incidental Finding Protocol

If an incidental finding is discovered and considered to be an emergency, the following steps will be taken first.

1. The student will immediately notify the supervising sonographer.
2. If the situation is deemed an emergency by the supervising instructor, emergency medical assistance (911 or local emergency number) will be contacted.

Once an Emergent Incidental Finding Protocol has been conducted, all other incidental findings guidelines should be followed.

NORTHWESTERN STATE UNIVERSITY SONOGRAPHY PROGRAM INCIDENTAL FINDINGS REFERRAL FORM

Date/Time: _____

Department: _____

Supervising Sonographer: _____

Model Name: _____

Sonography exams performed:

Organ/ body are/ sonographic procedure	Comments

Supervising sonographer has disclosed to the model an incidental finding has been discovered. The model has been advised to see their personal physician.

The Northwestern State University Ultrasound program is not responsible or liable for any costs or results associated with a model seeking medical evaluation or care based on the referral.

Model Signature

Supervising Sonographer signature