

SONOGRAPHY, B.S.

The St. Mary's/Marshall University Sonography Degree program offers a comprehensive curriculum designed to equip students with the knowledge and skills necessary to excel in the dynamic field of diagnostic medical sonography. This program provides a strong foundation in both **Adult Echocardiography** and **General Sonography**, preparing graduates to work effectively in diverse healthcare settings, such as hospitals, clinics, and imaging centers.

Key Areas of Emphasis:

- 1. Adult Echocardiography:** The Adult Echocardiography track focuses on using ultrasound technology to assess the structure and function of the heart and vascular system. Students learn to perform and interpret various echocardiogram procedures, including transthoracic and transesophageal echocardiograms. Through practical experience and coursework, students gain expertise in:
 - Cardiac and vascular anatomy and physiology
 - Doppler ultrasound techniques to assess blood flow
 - Identifying pathologies such as vascular disease, valvular disease, coronary artery disease, and heart failure
 - Advanced imaging techniques for the evaluation of cardiac function
- 2. General Sonography:** The General Sonography portion of the program covers a broad spectrum of diagnostic imaging techniques, focusing on imaging the abdominal organs, pelvic structures, and other soft tissues. Students are trained to perform ultrasounds of:
 - The abdomen (liver, kidneys, pancreas, spleen, gallbladder)
 - The pelvic region (bladder, uterus, ovaries, prostate)
 - Obstetrical sonography, including fetal imaging in pregnancy
Through clinical training, students gain hands-on experience in performing diagnostic exams and learn to interpret ultrasound images to assist in patient diagnosis.
 - Visceral and vascular anatomy and pathology

Program Structure:

The program combines classroom instruction, laboratory work, and clinical practice, ensuring that students develop both theoretical knowledge and hands-on expertise. Key components of the program include:

- **Coursework:** Focuses on the fundamentals of human anatomy, medical imaging physics, ultrasound principles, patient care, and specialized techniques in vascular sonography, echocardiography, and general sonography.
- **Clinical Rotations:** Students gain practical experience in accredited healthcare facilities, working directly with patients and under the supervision of registered sonographers. These rotations are critical for mastering the skills required for real-world diagnostic imaging.
- **Certification Preparation:** The program is designed to prepare students for certification exams, such as those offered by the American Registry for Diagnostic Medical Sonography (ARDMS), enabling graduates to become registered sonographers in adult echocardiography, vascular sonography, abdominal sonography, and OB/GYN sonography.

Four-Year Sonography Program Admission Requirements

Year One: Applicants must demonstrate unconditional admission into Marshall University. Year One coursework will occur at Marshall University. Upon completion of the Year One curriculum, students can make separate application to B.S. in Sonography.

Admission to the Sonography is limited to 6-8 students. Applicants are ranked by points using the following criteria:

1. ACT score: 21 (additional points are given for ACT scores of 19 or better in math and science)
2. GPA: 3.00 minimum
3. Grade of C or better in all prerequisite courses.

Also, it is required for admission to the BS in Sonography to complete a negative drug screen and background check. Drug screen and background checks will be conducted at the applicant's expense.


Year Two, Second Semester: After being admitted to the B.S. in Sonography they will select one of the Areas of Emphasis:

- General Sonography
- Adult Echocardiography.









Year Four: Progression through to is dependent upon maintaining a minimum GPA of 3.00 in Sonography and related courses required for the major 3.00 and grade of C or better in all Sonography coursework.








Course Requirements

 - General Education Course

 - Milestone course: a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at <https://www.marshall.edu/gened/>.

Code	Title	Credit Hours
Core Curriculum		
<i>Core 1: Critical Thinking</i>		
FYS 100	First Yr Sem Critical Thinking	3
MTH 121 	Concepts and Applications (CT)	3
CLS 105 	Medical-Lab Terminology (CT)	3
<i>Core 2</i>		
ENG 101 	Beginning Composition	3
ENG 201 	Advanced Composition	3
CMM 103 	Fund Speech-Communication	3
MTH 121 	Concepts and Applications (CT)	3
BSC 228 	Human Physiology	3
BSC 228L 	Human Physiology Lab	1
Core II Humanities		3
Core II Social Science		3
Core II Fine Arts		3
<i>Additional University Requirements</i>		

Writing Intensive	3
MI 403 Adv Practice Medical Img (recommended)	
Writing Intensive	3
MI 411  Transcultural Healthcare (recommended)	
Multicultural or International	3
MI 411  Transcultural Healthcare (recommended)	
Capstone (see advanced modality track)	3
Major-Specific	
BSC 227 Human Anatomy	3
BSC 227L Human Anatomy Lab	1
BSC 228  Human Physiology	3
BSC 228L  Human Physiology Lab	1
PHY 101  Conceptual Physics	3
PHY 101L  Conceptual Physics Lab	1
CLS 105  Medical-Lab Terminology (CT)	3
MI 202 Patient Care Img Science	3
MI 204 Radiographic Anatomy	3
MI 208 Pharmacology for Imaging Sci	2
MI 211 Seminar Imaging Science	1
MI 212 Seminar Imaging Sciences II	1
MI 304 Radiographic Pathology	3
SONO 214 Intro to Sonography	3
SONO 212 Abdominal Sonography I	4
SONO 213 Ultrasound Physics I	3
SONO 216 Abdominal Sonography II	3
SONO 217 Ultrasound Physics II	3
SONO 210 Clinical Practice I	4
SONO 220 Clinical Practice II	4
SONO 310 Clinical Practice III	4


Areas of Emphasis-Specific


In Year 3, students choose one of two areas of emphasis:

- General Sonography (<http://catalog.marshall.edu/undergraduate/programs-az/health-professions/sonography/sonography-bs/general-sonography-emphasis/>) (12 hours)
- Adult Echocardiography (<http://catalog.marshall.edu/undergraduate/programs-az/health-professions/sonography/sonography-bs/adult-echocardiography-emphasis/>) (11 hours)




Semester Plan

St. Mary's School of Sonography is a hospital-based program, partnered with Marshall University to offer a Bachelor of Science in Sonography. The program curriculum is designed to prepare students to practice sonography and introduce students to related specialized imaging modalities. The program can be completed in four years. Credentialed Sonographers may enter the professional portion of the program (fourth year) and also obtain the degree.







 - General Education Course

 - Milestone course: a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

First Year

First Semester		Credit Hours
FYS 100	First Yr Sem Critical Thinking	3
ENG 101 	Beginning Composition	3
CMM 103 	Fund Speech-Communication	3
BSC 227	Human Anatomy	3
BSC 227L	Human Anatomy Lab	1
MTH 121 	Concepts and Applications (CT)	3
Credit Hours		16

Second Semester

ENG 201 	Advanced Composition	3
BSC 228 	Human Physiology	3
BSC 228L 	Human Physiology Lab	1
PHY 101 	Conceptual Physics	3
PHY 101L 	Conceptual Physics Lab	1
CLS 105 	Medical-Lab Terminology (CT)	3
Core II Social Science		3
Credit Hours		17

Second Year

First Semester		
SONO 214	Intro to Sonography	3
SONO 212	Abdominal Sonography I	4
SONO 213	Ultrasound Physics I	3
SONO 210	Clinical Practice I	4
MI 211	Seminar Imaging Science	1
MI 202	Patient Care Img Science	3
MI 204	Radiographic Anatomy	3
Credit Hours		21

Second Semester

MI 208	Pharmacology for Imaging Sci	2
MI 304	Radiographic Pathology	3
SONO 216	Abdominal Sonography II	3
SONO 217	Ultrasound Physics II	3
SONO 220	Clinical Practice II	4
MI 212	Seminar Imaging Sciences II	1
Credit Hours		16

Third Year

First Semester		
MI 306	Seminar Imaging Science	1
SONO 310	Clinical Practice III	4
SONO 315	Small Parts Sonography	3
SONO 318	Vascular Sonography I	4
Core II Fine Arts		3
Credit Hours		15

Second Semester

MI 311	Seminar Imaging Sciences III	1
SONO 320	Clinical Practice IV	4
SONO 424	Vascular Sonography II	3
Core II Humanities		3
Students take additional courses based on the Area of Emphasis chosen:		3-4

General Sonography

SONO 416 Obstetrical Sonography I

Adult Echocardiography

MI 407 Cardiovascular Anatomy

Credit Hours 14-15**Fourth Year****First Semester**

MI 403 Adv Practice Medical Img 3

SONO 410 Clinical Practice V 4

SONO 418 Registry Review I 1

Students take additional courses based on the Area of Emphasis chosen: 4-6

General Sonography


SONO 417 Gynecological Sonography I

SONO 422 Obstetrical Sonography II

(SONO 438 Fetal Echocardiography is optional)

Adult Echocardiography

SONO 423 Adult Echocardiography I

Credit Hours 12-14**Second Semester**MI 410  Research Medical Imaging 3MI 411  Transcultural Healthcare 3

SONO 420 Clinical Practice VI 4

SONO 436 Registry Review II 1

Students take additional courses based on the Area of Emphasis chosen: 2-4

General Sonography

SONO 421 Gynecological Sonography II

Adult Echocardiography

SONO 425 Adult Echocardiography II

Credit Hours 13-15**Total Credit Hours 124-129**

Areas of Emphasis

- Adult Echocardiography, Emphasis (<http://catalog.marshall.edu/undergraduate/programs-az/health-professions/sonography/sonography-bs/adult-echocardiography-emphasis/>)
- General Sonography, Emphasis (<http://catalog.marshall.edu/undergraduate/programs-az/health-professions/sonography/sonography-bs/general-sonography-emphasis/>)