

DIAGNOSTIC MEDICAL SONOGRAPHY, BS

Health care professions separate from nursing, medicine, and pharmacy provide a range of diagnostic, technical, therapeutic and direct patient care and support services that are critical to other health professionals they work with and the patients they serve.

The overall employment outlook for individuals with professional certifications varies, but is projected to be good to excellent by the U.S. Bureau of Labor Statistics. The BS degrees include Diagnostic Medical Sonography, Histotechnology, Medical Technology, Nuclear Medicine Technology, Radiation Therapy Technology, and Radiography. These areas involve completing required course work at Roosevelt University, followed by clinical training at the appropriate affiliate clinical site. A separate application to the clinical training program is required, and acceptance is not guaranteed. Roosevelt University offers five programs with clinical training at Northwestern Memorial Hospital, Chicago (Diagnostic Medical Sonography, Histotechnology, Nuclear Medicine Technology, Radiation Therapy Technology, and Radiography (<https://clinicalschools.nm.org/>)) and one program with clinical training at NorthShore Health Systems, Evanston (Medical Technology (<https://www.northshore.org/academics/academic-programs/other-programs/medical-technology/>)).

Requirements

Courses taken for the major must be taken on a letter grade basis. A grade of C- is the minimal acceptable grade for a course to be applied to the major, or to be acceptable as a prerequisite for subsequent courses. A minimum cumulative GPA of 2.0 is required for all courses in the major. However, it is important to note that the clinical affiliates have their own GPA requirements and may not accept grades of C- for certain required prerequisite courses.

Each of the areas of study has its own prerequisite courses and requirements. These programs require students to complete all required coursework before applying to the clinical affiliate. Students are not guaranteed admission into the clinical training portion of the degree. Students must make certain they are fully aware of each area's specific acceptance requirements. Students interested in these health care careers should seek early guidance from the health coordinator in the Department of Biological, Physical, and Health Sciences.

Standards

- AP biology credit with a score of 3.0 or higher may apply toward the major in biology or the general education requirements after consultation with an advisor.
- AP chemistry with a score of 4 or higher satisfies the requirements for CHEM 201 GENERAL CHEMISTRY I with lab.
- AP Physics I (2014 or later) with a score of 3.0 satisfies the requirement for PHYS 201 INTRODUCTION TO NON-CALCULUS BASED PHYSICS I with lab.
- AP Physics II (2014 or later) with a score of 3.0 satisfies the requirement for PHYS 202 INTRO TO NON-CALCULUS PHYSICS II with lab.
- AP Physics C: Mechanics with a score of 3.0 satisfies the requirement for PHYS 201 INTRODUCTION TO NON-CALCULUS BASED PHYSICS I with lab and PHYS 233 CALCULUS-BASED PHYSICS I DISCUSSION.

- AP Physics C: Electricity and Magnetism with a score of 3.0 satisfies the requirement for PHYS 202 INTRO TO NON-CALCULUS PHYSICS II with lab and PHYS 234 CALCULUS-BASED PHYSICS II DISCUSSION.

In addition, students must:

- Take a minimum of their last 30 credit hours at Roosevelt University; off-site clinical courses count toward this requirement.
- Take at least 20 credit hours in acceptable Biology, Chemistry, or Physics courses at Roosevelt University; not more than 15 credit hours of acceptable Biology courses may be transferred to Roosevelt University and applied toward the BS degree.
- Transfer students need to complete a minimum of 1 year of full-time studies at Roosevelt University to be eligible for affiliate benefits.
- Once enrolled in the program, complete all remaining Biology, Chemistry, Physics, and Mathematics course requirements for these BS degrees at Roosevelt University. Under special circumstances, written permission to take required courses elsewhere may be granted by the health coordinator.
- Apply only courses in biology taken within the past eight years toward graduation.
- Limit to 4 credit hours the total of independent study hours (BIOL 395 INDEPENDENT STUDY/BCHM 395 INDEPENDENT STUDY/CHEM 395 INDEPENDENT STUDY) and independent research (BIOL 392 RESEARCH IN BIOLOGY/BCHM 392 RESEARCH IN BIOCHEMISTRY/CHEM 392 RESEARCH IN CHEMISTRY) used to fulfill the requirements of the major.

The Diagnostic Medical Sonography curriculum is designed to provide the student with a comprehensive body of knowledge and the necessary skills expected of a competent diagnostic medical sonographer technologist, also known as an ultrasound technologist. Diagnostic medical sonographers use high-frequency sound waves (ultrasound) to produce dynamic visual images of organs, tissues and blood flow inside the body. Sonographers work closely with physicians by providing diagnostic images and a summary of technical findings to aid in reaching a medical diagnosis. This is a non-radiation modality, and it may be used on any patient, from unborn babies to the elderly.

Sonographers may work in a hospital, a clinic, a physician's office, education, sales, or as an applications specialist. Students interested in allied health careers should seek early guidance from an advisor in the Department of Biological, Chemical, and Physical Sciences.

This is a **3+1.5 program** in which the first three years of course work is completed at Roosevelt University with the final year and a half-completed at the clinical affiliate site, Northwestern Memorial Hospital Chicago.

Standards

A grade of C- is the minimal acceptable grade for a course to be applied to the major, minor, or concentrations. A minimum cumulative GPA of 2.0 is required for all courses in the major. Note that these requirements differ from the clinical partner's requirements.

Clinical Admission

Admission to clinical training is at the discretion of Northwestern Medicine. Students are not guaranteed admission. The minimum GPA for application for this clinical program is a 2.5 GPA overall and a C grade in the pre-requisite courses. All applicants whose native language is not English must submit official TOEFL test scores (<https://clinicalschools.nm.org/uploads/1/1/2/0/112045435/>)

nm_clinical_schools_toefl_policy_rev_9.21.21.pdf) by the application deadline to Northwestern Medicine. Clinical course enrollment is subject to the satisfactory completion of pre-clinical course work and admission to the clinical program. Please consult the Northwestern Medicine Clinical Schools website (<https://clinicalschoools.nm.org/>) for specific information in regards to application and admission.

Students in the clinical training are registered through Roosevelt University and pay Roosevelt University tuition. There is no additional tuition charge for the clinical portion of the program.

Requirements

Diagnostic Medical Sonography students complete a minimum of 73 credit hours of academic work, including the College of Science, Health and Pharmacy general education requirements, in addition to the Diagnostic Medical Sonography core courses outlined below. Students must take their final 30 credit hours before clinical training at Roosevelt University. They complete their last 47 credit hours in an 18-month, full-time, daytime clinical training program at Northwestern Memorial Hospital*.

Upon successful completion of the program, students are awarded a certificate of program completion for Diagnostic Medical Sonography (DMS) from the hospital and will be eligible to be certified through examination by the national certifying agency, the American Registry for Diagnostic Medical Sonography. Graduates of the school may also take the Sonography Principles and Instrumentation, Abdomen and OB/GYN examinations. Students will also earn a BS in Diagnostic Medical Sonography from Roosevelt University.

*

Acceptance into the clinical training is not guaranteed and is at the discretion of the clinical site.

Code	Title	Credit Hours
Core		
ALH 119	INTRODUCTION TO MEDICAL TERMINOLOGY	3
BIOL 123	ANATOMY & PHYSIOLOGY I	1,3
BIOL 124	ANATOMY & PHYSIOLOGY II	1,3
BIOL 202	ECOLOGY, EVOLUTION, AND GENETICS	2,3
BIOL 301	CELLULAR & MOLECULAR BIOLOGY	2,3
CHEM 201	GENERAL CHEMISTRY I	2,3
CHEM 202	GENERAL CHEMISTRY II	2,3
CHEM 210	SURVEY OF ORGANIC CHEMISTRY	2,3
MATH 121	COLLEGE ALGEBRA	3
MATH 122	TRIGONOMETRY AND PRECALCULUS	3
MATH 217	ELEMENTARY STATISTICS	3
PHYS 201	INTRODUCTION TO NON-CALCULUS BASED PHYSICS I	1,3
Clinical Courses for Diagnostic Medical Sonography		
ALH 280	FUNDAMENTALS OF SONOGRAPHY	3
ALH 281	MANAGEMENT & METHODS OF PATIENT CARE	1
ALH 282	PATHOPHYSIOLOGY	2
ALH 283	SECTIONAL ANATOMY FOR THE SONOGRAPHER	2
ALH 284	ABDOMEN SONOGRAPHY WITH LAB	4

ALH 285	OB-GYN SONOGRAPHY WITH EMBRYOLOGY	3
ALH 286	CLINICAL EDUCATION I: SONOGRAPHY	2
ALH 305	ULTRASOUND IMAGE CRITIQUE	2
ALH 306	SPECIALITY SONOGRAPHY	2
ALH 307	PRINCIPLES OF ULTRASOUND PHYSICS I	3
ALH 308	PRINCIPLES OF ULTRASOUND PHYSICS II	3
ALH 309	OBSTETRICAL/GYNECOLOGICAL PATHOLOGY	4
ALH 310	CLINICAL EDUCATION II	3
ALH 311	ABDOMINAL PATHOLOGY	3
ALH 330	CLINICAL EDUCATION III	3
ALH 331	INTRODUCTION TO PEDIATRICS AND VASCULAR IMAGING	1
ALH 332	CLINICAL EDUCATION IV WITH SPECIALTIES	4
ALH 343	REGISTRY REVIEW	2
General Education, University Writing Requirement, and Electives		37
Core requirements		48
Clinical requirements		47
Total Credits for Degree		132

CORE Requirements (General Education)

Code	Title	Credit Hours
First Year Success Course or Transfer Success Course		
FYS 101 or TRS 101	FIRST YEAR SUCCESS COURSE TRANSFER SUCCESS 101	1
Communication Requirement		
ENG 101	COMPOSITION I: CRITICAL READING & WRITING	3
ENG 102	COMPOSITION II: INTRODUCTION TO ACADEMIC RESEARCH	3
COMM 101	PUBLIC SPEAKING (or program specific CORE communications course)	3
Ideas of Social Justice		
3 credits in coursework categorized as Ideas.		3
Humanities and Fine and Performing Arts		
9 credits from the following subject areas: African-American Studies, Art History, English (excluding ENG 101 and ENG 102), History, Languages, Music, Philosophy, Theatre, Communication and Women's and Gender Studies		9
Mathematics		
MATH 110	QUANTITATIVE LITERACY (or above) ¹	3
Science		
One biological science and one physical science required (one must include a one credit lab).		7-8
Social Sciences		
9 credits from the following subject areas: African-American Studies, Criminal Justice, Economics, History, Journalism, Philosophy, Political Science, Psychology, Sociology and Women's and Gender Studies		9

Experiential Learning

6 credits from coursework categorized as Experiential Learning. 6

Total Credit Hours 47-48

1

Higher level of Math may be required by major

These quantitative requirements also apply to degrees.

- Students must earn a minimum of 120 semester hours.
- Students may apply no more than 60 credit hours of 100-level courses toward the degree.
- Students must apply no fewer than 60 credit hours of 200- and 300-level courses toward the degree.
- Students must have at least 18 credit hours (of the 60 credit hours above) at the 300 level.
- Students may transfer in no more than 70 credit hours from community colleges.
- Students earning less than 60 total hours in residence must take their final 30 hours at Roosevelt University. Note that some majors have additional requirements for RU hours.
- Students must have a grade point average of 2.0 or higher to graduate. Note that some majors have additional GPA requirements.
- Students may apply no more than 51 hours in the major (BA) or 57 hours in the major (BS)

Your degree map is a general guide suggesting courses to complete each term on the academic pathway to your degree. It is based on the most current scheduling information from your academic program. Your program's degree map is reviewed annually and updated as schedules change (although you retain the same course requirements as long as you are continuously enrolled in your degree program).

Always work closely with your academic advisor to understand curriculum requirements and scheduling, as each student's academic plan can look slightly different.

Year 1

Fall	Credit Hours	Spring	Credit Hours
FYS 101		1 ENG 102	3
ENG 101		3 ALH 119	3
CHEM 201		5 CHEM 202	5
MATH 121		3 MATH 122	3
Humanities #1		3	
		15	14

Year 2

Fall	Credit Hours	Spring	Credit Hours
BIOL 123		4 BIOL 124	4
CHEM 211 or 210		5 MATH 217	3
COMM 101		3 Humanities #3	3
Humanities #2		3 General Elective	3
		15	13

Year 3

Fall	Credit Hours	Spring	Credit Hours
BIOL 202		5 BIOL 301 (Experiential Learning #1) ¹	5

PHYS 201	4 Social Science #2	3
Social Science #1	3 Social Science #3	3
	Ideas for Social Justice	3
	12	14

Year 4

Fall	Credit Hours	Spring	Credit Hours
ALH 280 (*)		3 ALH 307 (*)	3
ALH 281 (*)		1 ALH 308 (*)	3
ALH 282 (*)		2 ALH 309 (*)	4
ALH 283 (*)		2 ALH 310 (Experiential Learning #2, *)	3
ALH 284 (*)		4 ALH 311 (*)	3
ALH 285 (*)		3	
ALH 286 (*)		2	
		17	16

Professional Year 1 Courses

Fall	Credit Hours
ALH 305 (*)	2
ALH 306 (*)	2
ALH 330 (*)	3
ALH 331 (*)	1
ALH 332 (*)	4
ALH 343 (*)	2
	14

Total Credit Hours 130

1

Experiential Learning class must be 200/300 level and satisfies CORE requirement.

*

Must be accepted to clinical school for clinical training courses. Not guaranteed.