

BIOMEDICAL SCIENCES, BS: DIAGNOSTIC MEDICAL SONOGRAPHY

Students in the Biomedical Sciences major are awarded a Bachelor of Science degree upon completion of all requirements. Students choose from one of the following seven areas or submajors:

- Medical Laboratory Science
- Biomedical Science
- Cytotechnology
- Radiologic Technology
- Diagnostic Medical Sonography
- Diagnostic Imaging (degree completion program)
- Health Science (degree completion program)
- Public Health Microbiology

All students will be required to comply with a background check, drug screen, and maintain health insurance during the professional training experience.

Diagnostic Medical Sonography

By using high-frequency sound waves or ultrasound, sonographers produce images of soft tissue and blood flow to assist with the diagnostic process or administration of therapeutic application. Sonography is used to examine the abdomen, breast tissue, female reproductive system, urinary system, heart, and blood vessels. In addition, sound waves are used to guide fine-needle biopsy. Diagnostic Medical Sonography students complete the first two years of prerequisite courses on campus before applying for placement into the professional education portion of the curriculum. Once accepted into the professional education component of the program, students will take didactic and clinical education courses concurrently. Upon successful completion of the Bachelor of Science degree, students are eligible to write the national board exams offered through the American Registry for Diagnostic Medical Sonography (www.ardms.org (<http://www.ardms.org/>)). The Diagnostic Medical Sonography professional education program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org (<http://www.caahep.org/>)) upon recommendation of the Joint Review Committee on Education in Diagnostic Medical Sonography.

Commission on Accreditation of Allied Health Education Programs
(CAAHEP)
25400 U.S. Highway 19 North, Suite 158
Clearwater, FL 33763
(727) 210-2354

Requirements

Students pursuing Diagnostic Medical Sonography complete their freshman and sophomore years on campus. Upon advancement to the major, students complete the professional training curriculum (junior and senior years) at one of three external clinical affiliate sites: Froedtert Hospital (Milwaukee), Advocate Aurora St. Luke's (Milwaukee), or UW Hospital and Clinics (Madison, WI). Two educational options are available: General/Vascular Sonography or Echocardiography/Vascular Sonography. Students are responsible for any relocation and all living expenses during clinical training. Requirements for entry into

the professional programs may vary by site; students should contact the Academic Advisor for this program, Bill Mueller, for the most current site/program requirements. Mr. Mueller may be reached via e-mail at muellew@uwm.edu.

Entry into the clinical major is competitive, with the minimum requirements listed below. Completion of the minimum requirements does not guarantee admission.

1. Completion of UWM's General Education Requirements (GER) (<https://catalog.uwm.edu/archive/2023-2024/policies/undergraduate-policies/#bachelorsdegreegeneraleducation>).
2. Completion of all required courses and electives (56 credits) in the preclinical semesters with a cumulative GPA of 3.0; a maximum of 4 courses may be repeated once.
3. Successful completion of the professional education application process to include an on-site interview with the external sonography programs.
4. Successful completion of a background check, health physical, drug screen, and maintenance of health insurance and CPR certification for the duration of the professional curriculum.
5. Students are required to earn a grade of C or better in the following:

| Code | Title | Credits |
|-------------|--|---------|
| DMI 300 | Diagnostic Medical Imaging Fundamentals | 2 |
| BIO SCI 202 | Anatomy and Physiology I | 4 |
| CHEM 100 | Chemical Science | 4 |
| BIO SCI 203 | Anatomy and Physiology II | 4 |
| BMS 301 | Human Pathophysiology: Fundamentals | 1 |
| BMS 302 | Human Pathophysiology: Organ Systems I | 1 |
| BMS 303 | Human Pathophysiology: Organ Systems II | 1 |
| BMS 304 | Human Pathophysiology: Organ Systems III | 1 |
| BMS 305 | Human Pathophysiology: Organ Systems IV | 1 |

6. Complete a minimum of eight hours shadowing a sonographer: four hours of cardiac sonography and four hours in general sonography with a Registered Diagnostic Medical Sonography professional prior to applying for placement into the professional education component.
7. Completion of a CNA (Certified Nursing Assistant) course is required for the clinical application and placement. View a list of WI nurse aide training programs at www.dhs.wisconsin.gov/caregiver/ (<http://www.dhs.wisconsin.gov/caregiver/>).

Admission into the professional training curriculum is highly competitive and final admission decisions rest with the program directors. Admission is not guaranteed. To remain eligible to continue in the professional training curriculum, students must adhere to all program policies and procedures.

| Code | Title | Credits |
|---------------------------------------|--|---------|
| Preclinical Requirements | | |
| <i>General Education Requirements</i> | | |
| | Oral and Written Communication (OWC) Competency Part A & B | |
| | Quantitative Literacy (QL) Competency Part A and B | |

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|--|---|---|
| Foreign Language Competency | | |
| Arts | | 3 |
| Humanities | | |
| Natural Sciences | ¹ | |
| Social Sciences | ¹ | |
| Cultural Diversity | ¹ | |
| <i>Major Requirements</i> | | |
| HS 222 | Language of Medicine | 3 |
| HS 224 | Computational Tools for Healthcare Professionals | 3 |
| CHEM 100 | Chemical Science | 4 |
| BIO SCI 202 | Anatomy and Physiology I | 4 |
| BIO SCI 203 | Anatomy and Physiology II | 4 |
| BIO SCI 150 | Foundations of Biological Sciences I | 4 |
| DMI 300 | Diagnostic Medical Imaging Fundamentals | 2 |
| BMS 205 | Introduction to Diagnostic Medicine | 3 |
| BMS 245 | Client Diversity in Health Sciences: An Interdisciplinary Perspective (SS/CD) | 3 |
| BMS 301 | Human Pathophysiology: Fundamentals | 1 |
| BMS 302 | Human Pathophysiology: Organ Systems I | 1 |
| BMS 303 | Human Pathophysiology: Organ Systems II | 1 |
| BMS 304 | Human Pathophysiology: Organ Systems III | 1 |
| BMS 305 | Human Pathophysiology: Organ Systems IV | 1 |
| COMMUN 103 | Public Speaking (HU) | 3 |
| COMSDIS 250 | Interprofessional Communication in the Health Sciences (SS) | 3 |
| DMI 101 | Introduction to Medical Imaging | 1 |
| KIN 270 | Statistics in the Health Professions: Theory and Practice | 3 |
| ENGLISH 207 | Health Science Writing | 3 |
| PHILOS 244 | Ethical Issues in Health Care: (HU) | 3 |
| Professional & Clinical Training ² | | |
| DMI 311 | Abdominal Sonography-I | 3 |
| DMI 312 | Abdominal Sonography-II | 3 |
| DMI 313 | Sonography Clinical Education I | 3 |
| DMI 319 | Abdominal Sonography III | 3 |
| DMI 320 | Obstetrics/Gynecology Sonography I | 3 |
| DMI 321 | Obstetrics/Gynecology Sonography II | 3 |
| DMI 322 | Obstetrics/Gynecology Sonography III | 3 |
| DMI 323 | Sonographic Principles and Instrumentation | 3 |
| DMI 324 | Sonography Clinical Education II | 3 |
| DMI 325 | Specialized Sonography | 3 |
| DMI 326 | Sonography Clinical Education III | 3 |
| DMI 327 | Foundations of Sonography I | 2 |
| DMI 328 | Foundations of Sonography II | 1 |
| DMI 402 | Introduction to MSK Sonography | 3 |
| DMI 450 | Vascular Sonography I | 3 |
| DMI 451 | Vascular Sonography II | 3 |

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| DMI 452 | Sonography Clinical Education IV | 3 |
| DMI 453 | Seminar in OB/GYN Sonography | 3 |
| DMI 454 | Embryology of the Heart | 3 |
| DMI 455 | Vascular Sonography III | 3 |
| DMI 457 | Sonography Clinical Education V | 4 |
| DMI 458 | Seminar in Advanced Medical Imaging | 3 |
| DMI 460 | Professional Development in Sonography - Seminar | 3 |
| DMI 461 | Sonography Clinical Education VI | 3 |
| DMI 463 | Seminar in Education and Management in Medical Imaging | 3 |
| DMI 464 | Introduction to Pediatric Sonography/ Neurosonography | 3 |
| Total Credits | | 130 |

¹ Credit may be utilized in required curriculum areas.

² Example of the general/vascular curriculum provided. Curriculum course list and sequence given to student upon advancement to major.

Pre-Professional Training Requirements

| Year 1 | | |
|----------------------|---|-----------|
| Spring | | Credits |
| BIO SCI 203 | Anatomy and Physiology II * | 4 |
| HS 222 | Language of Medicine | 3 |
| KIN 270 | Statistics in the Health Professions: Theory and Practice (QLB) | 3 |
| PHILOS 244 | Ethical Issues in Health Care: (HU) | 3 |
| Credits | | 13 |
| Fall | | |
| BIO SCI 202 | Anatomy and Physiology I * | 4 |
| BMS 205 | Introduction to Diagnostic Medicine | 3 |
| COMMUN 103 | Public Speaking (HU) | 3 |
| CHEM 100 | Chemical Science * | 4 |
| DMI 101 | Introduction to Medical Imaging | 1 |
| Credits | | 15 |
| Year 2 | | |
| Spring | | Credits |
| BMS 245 | Client Diversity in Health Sciences: An Interdisciplinary Perspective (SS/CD) | 3 |
| BMS 304 | Human Pathophysiology: Organ Systems III * | 1 |
| BMS 305 | Human Pathophysiology: Organ Systems IV * | 1 |
| HS 224 | Computational Tools for Healthcare Professionals | 3 |
| ENGLISH 207 | Health Science Writing (OWCB) | 3 |
| GER Elective (Arts) | | 3 |
| Credits | | 14 |
| Fall | | |
| BIO SCI 150 | Foundations of Biological Sciences I | 4 |
| BMS 301 | Human Pathophysiology: Fundamentals * | 1 |
| BMS 302 | Human Pathophysiology: Organ Systems I * | 1 |
| BMS 303 | Human Pathophysiology: Organ Systems II * | 1 |
| COMSDIS 250 | Interprofessional Communication in the Health Sciences (SS) | 3 |
| DMI 300 | Diagnostic Medical Imaging Fundamentals * | 2 |
| Credits | | 12 |
| Total Credits | | 54 |

* Requires grade of C or better.

Professional Training Curriculum Course List: General/Vascular

(Curriculum course list and sequence provided to student upon advancement to major.)

| Code | Title | Credits |
|----------------------|--|-----------|
| DMI 311 | Abdominal Sonography-I | 3 |
| DMI 312 | Abdominal Sonography-II | 3 |
| DMI 313 | Sonography Clinical Education I | 3 |
| DMI 319 | Abdominal Sonography III | 3 |
| DMI 320 | Obstetrics/Gynecology Sonography I | 3 |
| DMI 321 | Obstetrics/Gynecology Sonography II | 3 |
| DMI 322 | Obstetrics/Gynecology Sonography III | 3 |
| DMI 323 | Sonographic Principles and Instrumentation | 3 |
| DMI 324 | Sonography Clinical Education II | 3 |
| DMI 325 | Specialized Sonography | 3 |
| DMI 326 | Sonography Clinical Education III | 3 |
| DMI 327 | Foundations of Sonography I | 2 |
| DMI 328 | Foundations of Sonography II | 1 |
| DMI 402 | Introduction to MSK Sonography | 3 |
| DMI 450 | Vascular Sonography I | 3 |
| DMI 451 | Vascular Sonography II | 3 |
| DMI 452 | Sonography Clinical Education IV | 3 |
| DMI 453 | Seminar in OB/GYN Sonography | 3 |
| DMI 454 | Embryology of the Heart | 3 |
| DMI 455 | Vascular Sonography III | 3 |
| DMI 457 | Sonography Clinical Education V | 4 |
| DMI 458 | Seminar in Advanced Medical Imaging | 3 |
| DMI 460 | Professional Development in Sonography - Seminar | 3 |
| DMI 461 | Sonography Clinical Education VI | 3 |
| DMI 463 | Seminar in Education and Management in Medical Imaging | 3 |
| DMI 464 | Introduction to Pediatric Sonography/ Neurosonography | 3 |
| Total Credits | | 76 |

Professional Training Curriculum Course List: Echocardiography/Vascular

(Curriculum course list and sequence provided to student upon advancement to major.)

| Code | Title | Credits |
|---------|---|---------|
| DMI 310 | Introduction to Sonography | 3 |
| DMI 323 | Sonographic Principles and Instrumentation | 3 |
| DMI 336 | Cardiovascular Principles I | 3 |
| DMI 337 | Clinical Education I - Echocardiography | 3 |
| DMI 340 | Embryology of the Cardiovascular System | 2 |
| DMI 341 | Adult Echocardiography - Valvular Pathology | 3 |

| | | |
|---------|--|---|
| DMI 342 | Clinical Education II - Echocardiography | 3 |
| DMI 345 | Pediatric Echocardiography I | 3 |
| DMI 346 | Adult Echocardiography II - Cardiomyopathies | 3 |
| DMI 347 | Clinical Education III - Echocardiography | 3 |
| DMI 435 | Adult Echocardiography - Advanced Pathology | 3 |
| DMI 436 | Pediatric Echocardiography II | 3 |
| DMI 437 | Stress Echocardiography | 3 |
| DMI 438 | Clinical Education IV - Echocardiography | 3 |
| DMI 439 | Clinical Education V - Echocardiography | 4 |
| DMI 440 | Clinical Education VI - Echocardiography | 3 |
| DMI 441 | Special Procedures in Echocardiography | 3 |
| DMI 450 | Vascular Sonography I | 3 |
| DMI 451 | Vascular Sonography II | 3 |
| DMI 454 | Embryology of the Heart | 3 |
| DMI 455 | Vascular Sonography III | 3 |
| DMI 458 | Seminar in Advanced Medical Imaging | 3 |
| DMI 460 | Professional Development in Sonography - Seminar | 3 |
| DMI 463 | Seminar in Education and Management in Medical Imaging | 3 |

Total Credits 72

Honors in the Major

Honors in the major are granted to students who earn a GPA of 3.500 or above on a minimum of 30 completed credits at UWM.

College of Health Professions and Sciences Dean's Honor List

GPA of 3.500 or above, earned on a full-time student's GPA on 12 or more graded credits in a given semester.

Honors College Degree and Honors College Degree with Distinction

Granted to graduating seniors who complete Honors College requirements, as listed in the Honors College (<https://catalog.uwm.edu/honors-college/>) section of this site.

Commencement Honors

Students with a cumulative GPA of 3.500 or above, based on a minimum of 40 graded UWM credits earned prior to the final semester, will receive all-university commencement honors and be awarded the traditional gold cord at the December or May Honors Convocation. Please note that for honors calculation, the GPA is **not** rounded and is truncated at the third decimal (e.g., 3.499).

Final Honors

Earned on a minimum of 60 graded UWM credits: Cum Laude - 3.500 or above; Magna Cum Laude - 3.650 or above; Summa Cum Laude - 3.800 or above.