WASHBURN UNIVERSITY
SCHOOL OF APPLIED STUDIES
Diagnostic Medical Sonography Program

DMS Course Descriptions

AL300 Introduction to Ultrasound (2)

- An introduction to the Diagnostic Medical Sonography profession. Topics include discussion of sonographic terminology, basic theories of equipment operation, body imaging, seminars in patient care, professionalism, and information concerning clinical education.

AL330 Ultrasound & Cardiovascular Physics & Instrumentation (3)

- This course provides information concerning the basic physical principles of sound waves, their applications to the human body, the operation and physical characteristics of the transducer, the method by which the sound waves are converted into an image. In-depth instruction on physics principles and instrumentation will be presented. Topics include: image creation, hemodynamics of blood flow, quality assurance, biological effects, color flow Doppler, spectral Doppler and continuous wave Doppler. P*rerequisite: Admission to Diagnostic Medical Sonography program or consent.*

AL331 Ultrasound & Cardiovascular Physics & Instrumentation II (3)

- This course is a continuation through the physics of sonography. It will continue the exploration of the basic physical principles of sound waves, their applications to the human body, the operation and physical characteristics of the transducer, the method by which the sound waves are converted into an image. An in-depth instruction on physics principles and instrumentation will be presented. Topics include: image creation, hemodynamics of blood flow, quality assurance, biological effects, color flow Doppler, spectral Doppler and continuous flow Doppler. *Prerequisite: AL 330.*

AL332 Physics & Instrumentation Board Review (2)

- This course will review the entire curriculum related to the physics of sonography and sonography instrumentation to prepare the student for the national credentialing examinations.

AL361 Sonography Clinical I (6)

- Students are assigned to various clinical settings to allow the student to begin developing the technical scanning skills of sonography. *Prerequisite: Admission to Diagnostic Medical Sonography program.*

AL362 Sonography Clinical II (3)

- Students will continue their clinical experience in hospital and office settings. They will be exposed to an intermediate level of complexity involving the various procedures included in the general sonography curriculum, and they will have active participation. Prerequisite: AL 361.

AL363 Sonography Clinical III (6)

- Students will continue their clinical experience in hospital and office settings. They will continue to be exposed to an intermediate level of complexity involving the various procedures included in the general sonography curriculum. *Prerequisite: AL 362.*

AL364 Sonography Clinical IV (6)

- Students will continue their clinical experience in hospital and office settings. They will be exposed to an advanced level of complexity involving the various procedures included in the general sonography curriculum. Prerequisite: AL 363.

AL365 Sonography Clinical V (3)

- The student will be participating in advanced general sonography procedures in both hospital and office settings. *Prerequisite: AL 364.*

AL371 General Sonography Procedures I (3)

- Online didactic education concerning embryology, anatomy, physiology, and pathophysiology related to abdominal sonographic procedures. *Prerequisite: Admission to Diagnostic Medical Sonography program.*

AL 372 General Sonography Procedures II (3)

- A continuation of AL 371 with a focus on “small parts” sonographic procedures. *Prerequisite: AL 371.*

AL 379 Clinical Topics in General Sonography (2)

- The course will cover a review of basic and specialized procedures in the realm of general sonography, obstetrical, and gynecological sonography. Among the content will be abdominal, small parts, gynecology, and obstetrical ultrasound. *Prerequisite: AL 392.*

AL 383 Cardiac Sonography Procedures I (3)

- The content of this course will include an in-depth exploration of cardiac embryology, anatomy and physiology, pathophysiology, echocardiographic procedures, imaging techniques, and protocols to specific echocardiography. *Prerequisite: Admission to the Diagnostic Medical Sonography program or consent.*

AL 384 Cardiac Sonography Procedures II (3)

- A detailed and in-depth exploration of various cardiac pathology and their echocardiographic manifestations. *Prerequisite: Admission to the Diagnostic Medical Sonography program or consent.*

AL 385 Cardiac Sonography Clinical I (6)

- Students are assigned to various clinical settings to allow the student to begin developing the technical skills necessary to become an echocardiographer. Prerequisite: Admission to Diagnostic Medical Sonography program.

AL 386 Cardiac Sonography Clinical II (6)

- Students will continue their clinical experience at various clinical settings including hospital and office facilities. They will be exposed to an intermediate level of cardiac sonography procedures and will actively participate. *Prerequisite: AL 385.*

AL 387 Advanced Cardiac Sonography Clinical (3)

- The students will be participating in advanced cardiac sonography procedures, again in a variety of clinical settings. *Prerequisite: AL 386.*

AL 388 Clinical Topics in Cardiac Sonography (2)

- The course will cover new and highly specialized procedures in the realm of echocardiography, such as stress echo (treadmill and pharmacological), contrast echocardiography, diastology, and transesophageal echocardiography. It will also provide a review and Mock Testing for Boards. *Prerequisite: AL 384.*

AL 389 General Sonography Procedures III (3)

- This course content is sequential to AL 372 and will involve sonographic evaluation and diagnosis specific to female anatomic structures and diseases. *Prerequisite: AL 372 or consent.*

AL 392 General Sonography Procedures IV (3)

- This course content is sequential to AL 389 and will involve the sonographic evaluation of the obstetrical & gynecological patient. *Prerequisite: AL 389 or consent.*

AL 393 Vascular Sonography Procedures I (3)

- An in-depth discussion of the anatomy, physiology, and pathophysiology of the peripheral and cerebral vascular systems. The focus will be on the cerebrovascular system and the arterial and venous systems of the lower extremities. Hemodynamics, Doppler waveforms, pressure measurements, plethysmography, appropriate pharmacology, sonographic appearance, and scanning techniques will be discussed. This will include arterial and venous systems, therapeutic intervention, and noninvasive testing-exam protocols. *Prerequisite: Admission to Diagnostic Medical Sonography program.*

AL 394 Vascular Sonography Procedures II (3)

- Continuation of AL 393 to include discussion of the anatomy, physiology, and pathophysiology of the abdominal and peripheral vascular systems. The focus will be on the abdominal vasculature and on the arterial and venous systems of the upper extremities. Hemodynamics, Doppler waveforms, pressure measurements, plethysmography, appropriate pharmacology, sonographic appearance and scanning techniques will be discussed. Therapeutic intervention includes arterial and venous systems, noninvasive testing, and exam protocols. *Prerequisite: AL 393.*

AL 395 Vascular Sonography Clinical I (6)

- Skill development of ultrasonography procedures for extremity arterial and venous, cerebrovascular, abdominal vascular evaluation, and other special noninvasive vascular procedures. Students are assigned to various clinical settings to allow the student to begin developing the necessary technical skills. *Prerequisite: Admission to Diagnostic Medical Sonography program.*

AL 396 Vascular Sonography Clinical II (6)

- Students will continue their clinical experience at various clinical settings, including hospitals and office facilities. They will be exposed to an intermediate level of vascular sonographic procedures and will actively participate. *Prerequisite: AL 395.*

AL 397 Advanced Vascular Sonography Clinical (3)

- Students will be participating in advanced vascular procedures, again at a variety of clinical settings. *Prerequisite: AL 396*.

AL 398 Clinical Topics in Vascular Sonography (2)

- The course will cover new and highly specialized procedures in the realm of vascular sonography. Among the content will be hemodialysis access, transcranial Doppler, and mapping procedures. It will also provide review and Mock Testing for Boards.