

Midland College
Syllabus
Spring
DMSO 2351
Doppler Physics (3-0-0)

Course Description:

This course emphasizes Doppler and hemodynamic principles relating to arterial and venous imaging and testing.

Text, References and Supplies:

Edelman, Sidney K., Understanding Ultrasound Physics, Fourth Edition.
Kremkau, Frederick W., Sonography Principles and Instruments, Ninth Edition.

Student Learning Outcomes:

Upon successful completion of the course the student will have knowledge and understanding of the following learning outcomes which will be addressed:

1. The physical principles and dynamics of blood circulation (hemodynamics).
2. The Doppler Effect and the operation of instruments that measure this effect.
3. The information obtained in a Doppler exam to the physiologic state of the patient.
4. Color flow and color power imaging and the operation of instruments that perform color flow imaging.
5. The artifacts associated with Doppler and color flow evaluation of vascular structures.
6. The instruments and methods used in the evaluation of Doppler equipment.
7. The application of Doppler and vascular principles and techniques to aid in the interpretation of vascular disease of the great vessels, the hepatic and portal venous system, the kidneys and the peripheral arterial and venous system.
8. The use of contrast agents and tissue harmonics in ultrasound.

Student Contributions, Responsibilities and Class Policies:

Attendance is essential to the student's success and is outlined in the Midland College Catalog and Student Handbook, as well as, the Diagnostic Medical Sonography Student Handbook. The student is expected to participate in class discussions. Reading assignments are also important and should be completed prior to lectures for each unit. Material from reading which is not covered in class may appear on tests. Missed exams and late assignments will be accepted with the loss of one (1) letter grade per scheduled class day that it is late. Alternate exams and/or exam format may be substituted. Failure to comply with all components of this course will result in a failing grade.

Evaluation of Students:

The final grade will be a criterion-referenced standard percentage, not curved, composed as follows: 10% from class assignments and attendance, 20% from weekly quizzes, 45% from unit exams and 25% from the final examinations.

1. There will be three unit exams consisting of approximately 50-70 questions. Each exam will consist of a random sample of the material presented prior to the exam date. Multiple formats will be used including short answer, short essay, diagram labeling and multiple choice.
2. The final exam will consist of 100-150 multiple choice questions and will be similar to the format utilized by the registry. The exam will be constructed of a random sample of the material presented during the semester.
3. In the event that an exam is missed, it is the student's responsibility to arrange for the make-up exam within one week. The student may also expect an alternate testing method for the make-up exam. If an exam is not made up, the student will receive a zero for and grades will be averaged accordingly.
4. Class assignments may consist of online tasks including but not limited to online research, worksheets and online quizzes.
5. Weekly unit quizzes will consist of 10-30 questions over the material covered in the previous week. Multiple quizzing formats will be utilized.

Course Schedule:

Class will meet on Mondays from 8:30 – 11:30 a.m. except for scheduled Midland College holidays.

Americans with Disabilities Act (ADA):

Any student who, because of a disabling condition, may require some special arrangements in order to meet course requirements should contact Shep Grinnan as soon as possible. Mr. Grinnan's office is located in the Scharbauer Student Center Building. These conditions may include documented physical or educational disabilities. Please be aware that services or accommodations are not automatic. Each student must request them and secure the proper authorizations/documentation.

Licensure Eligibility Notification

Completion of Midland College degrees and/or certificates does not guarantee eligibility to take a certification/registry/licensure examination. The eligibility of each person is determined on an individual basis by the regulatory body of the specific discipline. If you have a conviction of a crime other than a minor traffic violation, physical or mental disability/illness, hospitalization/treatment for chemical dependency within the past five years, current intemperate use of drugs or alcohol or a previous denial of a licensure or action by a licensing authority, you will need to contact the specific regulatory body for an individual ruling. Some programs require a criminal background check and urine and drug screen.

Non-discrimination Statement

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individuals have been designated to handle inquiries regarding the non-discrimination policies: **Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781, tbaker@midland.edu; Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534, nmorgan@midland.edu.** For further information on notice of non-discrimination, visit <http://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm> or call **1 (800) 421-3481**.

Instructor Information:

Instructor: Brandi Havner, BAAS, RDMS
Office: Marie Hall Sim-Life Center/Davidson Family HSB, RM 108

Office phone: 432-685-5572

Email: bhavner@midland.edu

Office hours: As posted. Students are encouraged to contact their instructor; making an appointment will help facilitate an instructor's availability at a specific time.

Division Information: Health Sciences

Division Dean: Carmen Edwards, DNP, MSN, RN, 209 DFHS Building, 432-686-4822

Program Chair: Brandi Havner, RDMS, BAAS, 108 DFHS Building, 432-685-5572

Division Secretary: Karen Harris, 208 DFHS Building, 432-685-4600