



Course Prefix/Number/Title: DMS 241 Vascular Ultrasound I

Number of Credits: 1 semester credits

Course Description: This course is the study of the anatomy, normal findings and technical principles of ultrasound utilization in the hemodynamic considerations for assessment of cerebrovascular, peripheral and abdominal visceral imaging.

Pre-/Co-requisites: DMS 241L

Course Objectives: The goal of this course is a focus on the knowledge, skills and techniques for acquisition of vascular structures, as well as the appropriate sonographic protocols and image optimization of the vascular structures. Color and spectral Doppler applications will be applied to the appropriate anatomy. This course is integrated with DMS 241L, a hands-on sonographic scanning lab

Objectives:

1. Describe fluid dynamics in volumetric flow, hydrostatic pressure, resistance applicable to human vasculature.
2. Describe physiology and hemodynamics involved in peripheral vascular and blood flow imaging.
3. Discuss normal carotid vessel anatomy.
4. Describe peripheral arterial and venous anatomy in relation to ultrasound evaluation and assessment of disease.
5. Describe abdominal vascular anatomy and ultrasound assessment and techniques to include aorta, native renal vessels, mesenteric and reproductive organs.

Instructor: Amy Hofmann

Office: Suite 302 5th Ave Building, Trinity Health

Office Hours: 9 AM to 2 PM Tu, Th and by appointment

Phone: 857-5620

Email: amy.hofmann@trinityhealth.org

Lecture Schedule: 11:30 – 12:30 pm Th, in Suite 301

Lab Schedule: 8:30 – 10:30 am Th, in Suite 301

Textbook: Pellerito J., Polak J. Introduction to Vascular Ultrasound, 6th ed.
Diagnostic Sonography, Hagen-Ansert, 8th Edition. Understanding Ultrasound Physics, S.Edelman, 4th

Lab Manual: Trinity Health Clinical Education Handbook

Course Requirements:

Grading is based on completion of assignments, quizzes and test.

Assignments	15%
Quizzes	15%
Test	70%

Consistent with class attendance policy, the student is responsible for attending every class and for the material presented. If a student will not be attending a class, he/she must notify the Program Director prior to absence to plan for makeup time and activities.

Grading Criteria

A =	94-100% of the total points
B =	87 - 93% of the total points
C =	80 - 86% of the total points
F =	<79% of the total points

Tentative Lecture Outline:

<u>WEEK</u>	<u>TOPIC</u>	<u>READING</u>
1	hemodynamic considerations in vascular disease	Chpt 1
2	cont.	
3	physics and instrumentation in Doppler	Chpt 2
4	cont.	
5	basic concepts of Doppler spectrum analysis	Chpt 3
6	arterial extremity anatomy, sonography and Doppler	
7	cont.	
8	cont.	
9	venous extremity anatomy, sonography and Doppler	
10	cont.	
11	abdominal vascular anatomy, sonography and Doppler	
12	cont.	
13	review	
14	review	
15	testing	

CTE Competency/Department Learning Outcomes:

CTE Competency #1: Employ industry specific skills in preparation for workplace readiness

Learning outcome #1 - Students will demonstrate critical thinking and problem-solving skills in the classroom and clinical setting. SLO 1.1

Learning outcome#2 - Students will demonstrate knowledge of normal vascular anatomy and critically evaluate related sonographic images for diagnostic quality. SLO 1.2

Relationship to Campus Theme:

This course addresses a DMS Program theme by developing the knowledge and psychomotor scanning skill sets necessary to perform cerebrovascular, extremity and abdominal visceral vascular imaging. Students will be instructed by utilizing the protocols and techniques that are currently used in sonographic imaging.

Classroom Policies

1. Cell phones and related devices are monitored in the classroom at all times. It is recommended that you do not bring your cell phone or other electronic devices into the classroom or, at the very least, get instructor permission to use approved devices as classroom learning resources.
2. Food and beverages are permitted in accordance with classroom policy.
3. Be respectful of other students, instructors, and guests.

Student Email Policy

The Dakota College at Bottineau campus community is increasingly dependent upon electronic communication among faculty, staff and students. A student's campus-assigned e-mail address will be the only one recognized by the campus for official mailings. The liability for missing or not acting upon important information conveyed via email because of a failure to access a campus-assigned e-mail address rests with the student. Additionally, student must provide Trinity Health DMS faculty with a personal email address for communication while in the program.

Academic Integrity

According to the DCB Student Handbook, students are responsible for submitting their own work. Students who cooperate on oral or written examinations or work without authorization share the responsibility for violation of academic principles and the students are subject to disciplinary action even when one of the students is not enrolled in the course where the violation occurred. The Code detailed in the Academic Honesty/Dishonesty section of the Student Handbook will serve as the guideline for cases where cheating, plagiarism or other academic improprieties have occurred. Additionally, dishonesty in the classroom or laboratory and with assignments, quizzes and exams is a serious offense and is subject to disciplinary action by the DMS Program Director. For more information, refer to the Trinity Health DMS Program Handbook policies.

Disabilities and Special Needs

Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor, DMS Program Director and Disability Support Services.

Title IX:

Dakota College at Bottineau (DCB) faculty are committed to helping create a safe learning environment for all students and for the College as a whole. Please be aware that all DCB employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers) are required to report information about such discrimination and harassment to the College Title IX Coordinator. This means that if a student tells a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the College's Title IX Coordinator.