



Course Prefix/Number/Title: DMS 221 Abdominal Sonography I (2025)

Number of Credits: 2 semester credits

Course Description:

This course is the study of the anatomy, physiology, pathology and pathophysiology of the upper abdominal cavity, peritoneal cavity to include: aorta, IVC, celiac trunk, SMA, urinary system, gastrointestinal organs, abdominal wall, peritoneum and diaphragm as visualized by sonography, including the application of Doppler principles. This course is integrated with DMS 221L, a hands-on sonographic scanning lab that focuses on the knowledge, skills and techniques for acquisition of appropriate sonographic protocols and image optimization of the abdomen. Color and spectral Doppler applications will also be applied to the appropriate anatomy.

Pre-/Corequisites: DMS 201, DMS 221L

Course Objectives:

The goal of this course is to introduce the sonography student to the basics of ultrasound imaging techniques used in abdominal scanning, also to identify abdominal organ anatomy in the transverse and longitudinal planes

Objectives:

1. Describe scanning techniques and protocols used in abdominal scanning.
2. Identify abdominal sectional anatomy in transverse and longitudinal planes.
3. Explain terminology used to describe the results of normal ultrasound examinations.
4. Define the criteria for an adequate diagnostic abdominal ultrasound examination.
5. Describe renal function tests and their relevance to renal disease.
6. List the clinical signs and sonographic features for pathology discussed in course.
7. Describe the normal sonographic pattern of aorta, spleen, pancreas and kidneys.
8. Differentiate the sonographic appearances of the aorta, kidneys, spleen, pancreas and related pathologies discussed in this course.

Instructor: Amy Hofmann

Office: 5th Floor, Medical Arts Clinic, Trinity Health

Office Hours: M-Th 3:00-5:00 and by appointment

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Lecture/Lab Schedule: 9:00 – 3:00 pm M-F, in MAC Skywalk Rm A

Textbook: Diagnostic Sonography, Hagen-Ansert, 9th Edition; Workbook Diagnostic Sonography, Hagen-Ansert, 9th Edition.

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:

Date	Topic	Assignment/Quiz/Test
9/22	Body Systems, Indications, signs and symptoms	Review Ch 4 Hagen-Ansert
9/29	Abdominopelvic organ imaging	
10/6	Anatomic and physiologic relationships	Read Ch 5 Hagen-Ansert Pg102-109
10/13	Abdominopelvic cavity; Sectional anatomy	Quiz #1 Abdominopelvic A&P
10/20	Aorta normal anatomy, vascularity, clinical signs	Quiz #2 Abdominopelvic A&P Read Ch 8 Hagen-Ansert Assignment #1 Ch 8 Vascular Sys Complete HA Ch 8 Exer 1-6
10/27	Renal/urinary system anatomy	Quiz #3 Abdomen Vascular Assignment #2 Ch 8 Complete HA Ch 8 Exer 7-10 Read Ch 15 Hagen-Ansert
11/3	Renal/urinary system physiology, lab data	Quiz #4 Urinary System Assignment #3 Ch 15 Urinary Sys Complete HA Ch 15 Exer 1-5
11/10	Cont.	Assignment #4 Ch 15 Renal Pathology Complete HA Ch 15 Exer 6-10
11/17	Pancreas, anatomy	Read Ch 12 Hagen-Ansert

11/24	Spleen, anatomy	Read Ch 11 Hagen-Ansert
12/1	Sonographic appearance of pancreas, spleen	
12/8	Review aorta, urinary system, pancreas, spleen	
12/15	Final test on aorta, abdominal organs, urinary system,	Final Test

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 abdominopelvic anatomy and critically evaluate related sonographic images for diagnostic quality. SLO 1.2

Relationship to Campus Focus:

This course addresses a DMS Program theme by developing the knowledge and psychomotor scanning skill sets necessary to perform abdominal sonography 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. Students wishing to speak to a confidential employee who does not have this reporting responsibility can find a list of resources on the DCB Title IX webpage.

AI Student Policy:

Unless otherwise indicated in the course syllabus, or in individual instructions for course assignments, or in the absence of the express consent of the course instructor, students are not allowed to utilize generative AI to help produce any of their academic work. Any violation of this policy will be considered an act of academic dishonesty as outlined within the Dakota College Code of Student Life.

RESPONSIBILITIES

Students	• Responsible to follow the syllabus and assignment instructions regarding use of generative AI for all academic work. • Obtain permission of the instructor prior to the use of generative AI that is outside of the syllabus or assignment instructions. Provide appropriate rationale for how the use of generative AI will enhance the learning experience for the assignment. • In instances where generative AI is permissible, appropriately cite the generative AI program used and indicate where in the assignment it was used, in a brief submission statement
Faculty	• Determine if the use of generative AI could enhance student learning in any assignment of project. • Clearly indicate in all course syllabi if generative AI is allowable for any academic work. • If allowable, give specific parameters for how and when generative AI may be used. If a violation of generative AI for the individual course/syllabus is suspected, discuss the concern with the student. If violation is still suspected, inform the appropriate semester coordinator/program director.

