

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
DMS 241 - ADVANCED ABDOMINAL SONOGRAPHY (3 CR)**

Course Description

Presents advanced study of abdominal sonography with concentration on case study reviews of normal anatomy, physiology and pathophysiology, including abnormal etiology and diagnostic techniques. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

General Course Purpose

The purpose of this course is to provide students with advanced knowledge, techniques and procedures for evaluating the abdominal organs by case study review. Students will develop an advanced knowledge base to work from on how normal and abnormal abdominal anatomy and physiology appears with ultrasound. Students will be provided with scan lab demonstration and techniques that will allow them to apply what they learn in class to live scan models.

Course Prerequisites/Co-requisites

Prerequisite is DMS 211.

Course Objectives

Upon completing the course, the student will be able to:

- Demonstrate the ability to perform sonographic examinations of the abdomen, superficial structures, noncardiac chest, according to protocol guidelines established by national professional organizations utilizing real-time equipment with transabdominal transducers, and Doppler display modes.
- Recognize and identify the sonographic appearance of normal anatomic structures, including anatomic variants and normal Doppler patterns.
- Recognize, identify, and appropriately document the abnormal sonographic and Doppler patterns of disease processes, pathology, and pathophysiology of the abdominal structures.
- Modify the scanning protocol based on the sonographic findings and the differential diagnosis.
- Discuss the patient history and physical examination, related imaging, laboratory, and functional testing procedures.
- Discuss clinical differential diagnosis.
- Discuss the role of ultrasound in patient management.
- Discuss sonographic and Doppler patterns in clinical diseases.
- Demonstrate knowledge and understanding of the role of the sonographer in performing interventional/invasive procedures.

Major Topics to be Included

1. Normal anatomy, physiology and pathophysiology of the following structures:
 - a. Prevertebral vessels
 - b. Peritoneal cavity, including potential spaces
 - c. Gastrointestinal tract
 - d. Noncardiac chest
 - e. Neck
 - f. Scrotum
 - g. Prostate
 - h. Anterior abdominal wall
 - i. Lower extremities - venous

- j. Brain and spinal cord - neurosonography
 - k. Musculoskeletal
2. Sonographic and Doppler patterns in clinical diseases, including:
- a. Iatrogenic
 - b. Degenerative
 - c. Inflammatory
 - d. Traumatic
 - e. Neoplastic
 - f. Infectious
 - g. Obstructive
 - h. Congenital
 - i. Metabolic
 - j. Immunologic
3. Role of the sonographer in performing interventional/invasive procedures.