NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
DMS 160 - VASCULAR SONOGRAPHY I (4 CR.)

Course Description

Presents the fundamentals of vascular technology including basic ultrasound scanning techniques of the peripheral vascular and abdominal vascular systems. Students focus on anatomy, physiology, pathology, and vascular recognition with real-time 2-D and Doppler imaging. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

General Course Purpose

The purpose of this course is to provide the student with the basic knowledge, techniques and procedures for evaluating the peripheral vascular and abdominal vascular systems with real-time 2-D and Doppler imaging. Students will develop the basic knowledge base to work from on how normal and abnormal vascular 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

The student must satisfactorily complete all previous sonography courses with a grade of "C" or better.

Course Objectives

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

- Demonstrate the ability to obtain a patient history and determine appropriate diagnostic pathways.
- Identify and describe signs, symptoms, and risk factors of peripheral vascular diseases.
- Identify diseases contributing to vascular disease.
- Describe the mechanism of vascular diseases on vessels.
- Identify microscopic vascular anatomy.
- Identify normal peripheral vascular anatomy and recognize normal variants.
- Describe non-invasive vascular test indications, test capabilities and limitations pertaining to peripheral vascular disease.
- Recognize the function, and sonographic appearance of peripheral vascular grafts.
- Describe and demonstrate proper patient positioning and scan/test techniques for non-invasive peripheral vascular tests.
- Identify and describe the parameters used in interpretation of non-invasive peripheral vascular tests.
- Identify sonographic, Doppler, and color-flow artifacts.
- Describe post-interventional use of non-invasive vascular testing .
- Describe therapeutic medical, surgical and non-surgical peripheral vascular interventions.
- Identify invasive and other correlative vascular tests relative to peripheral vascular diseases pathologies.
- Describe the capabilities, limitations, and contraindications of invasive/correlative vascular tests relative to peripheral vascular diseases pathologies.
- Understand the normal physiology of blood circulation and the abnormalities that can occur in the presence of vascular diseases.
- Identify the characteristics of and to discriminate between arterial and venous flow patterns.

Major Topics to be Included

a. Normal and abnormal vascular anatomy: Cerebrovascular: Extracranial and intracranial.
b. Demonstrate knowledge of normal and abnormal vascular physiology.
c. Hemodynamics: Flow physics Exercise physiology
d. Vascular physiology, pathophysiology, and hemodynamics in the different types of vascular disease/disfunction
e. Clinical vascular diagnostic procedures.
f. Relationship of vascular diagnostic techniques to patient history and physical examination.
g. Indications for non-invasive vascular examination.
h. Differential diagnosis as it relates to non-invasive vascular testing and examination.