DMS A155: INTRODUCTION TO VASCULAR ULTRASOUND

Item	Value
Curriculum Committee Approval Date	03/13/2019
Top Code	122700 - Diagnostic Medical Sonography
Units	2.5 Total Units
Hours	63 Total Hours (Lecture Hours 36; Lab Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

This course is an introduction to vascular ultrasound including Doppler physical principles and instrumentation. The venous system of the upper and lower extremities is emphasized this semester. PREREQUISITE: DMS A150. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Integrate and analyze knowledge of venous vascular sonography; differentiate between normal and abnormal findings.

Course Objectives

- 1. Apply physical principles of hemodynamics and Doppler instrumentation to venous sonography.
- 2. Discuss and demonstrate technical aspects of venous scanning of the upper and lower extremities.
- 3. Demonstrate knowledge of signals produced by venous blood flow.
- 4. Identify and describe anatomy of venous system of upper and lower extremities.
- 5. Identify and describe pathophysiology of venous system of upper and lower extremities.
- 6. Discuss ultrasound-guided procedures in the venous system.

Lecture Content

Introduction to Hemodynamics Physics of Circulation Flow and Pressure Application to Venous System Vessel Compliance Hydrostatic Pressure Technical Considerations Instrumentation Color Doppler Pulsed-wave Doppler Power Doppler Transducers Artifacts related to Doppler Cross Sectional Anatomy Upper Extremity Lower Extremity Abdominal Vasculature IVC Iliacs Neck IJV Superficial Vessels Greater Saphaneous Vein (GSV) Lesser Saphaneous Vein (LSV) Pathophysiology of Venous System Deep Vein Thrombosis (DVT) Upper Lower Collateral Circulation Venous Ulcer Disease Thrombophlebitis Obesity Venous Insufficiency Cancer Pregnancy Sonographic Scanning Protocols Upper Lower Gray-Scale Imaging Doppler Color Pulsed-Wave Patient Considerations Position Size of Patient Portable Exams Patient History

Lab Content

Students will scan the anatomy that correlates with lecture: lower extremity and upper extremity venous. After learning protocals and practicing the exams in lab, a scan test will be given to the students.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

Lecture, PowerPoint presentations, printed handouts, lab demonstrations, clinical experience and small group discussion.

Reading Assignments

READING ASSIGNMENT: Students will read 4 hours a week from an assigned text.

Writing Assignments

WRITING ASSIGNMENT: Students will be required to write a report about vascular ultrasound by accessing material available on the Internet. This will require 1.5 hours per week.

Out-of-class Assignments

Students will be required to read from the textbook as well as complete assignments from a workbook that accompanies the text.

Demonstration of Critical Thinking

Objective examinations, lab participation and critical thinking demonstration through class discussions.

Required Writing, Problem Solving, Skills Demonstration

Students will be required to write a report about vascular ultrasound by accessing material available on the Internet.

Eligible Disciplines

Diagnostic medical technology-diagnostic medical sonography, neurodiagnosti...: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Kupinski, A.M.. Diagnostic Medical Sonography, The Vascular System, Third ed. Philadelphia: Lippincott Williams Wilkins , 2017