Advanced Non-Invasive Vascular Technology

Class
DSVT 2335

Course Description: Non-Invasive vascular concepts. Includes harmonics, contrast, power Doppler, digital intraoperative, intravascular, abdominal vascular, graft surveillance, vascular interventions, and research. Emphasizes extensive review of case studies, technical reporting, preliminary interpretation, and registry review. (2-2-0)

Course Learning Objectives

End-of-Course Outcomes: Evaluate current diagnostic trends in non-invasive vascular technology; list the indications, contraindications, technical aspects, and standard protocols for each of the advanced modalities; perform advanced vascular procedures utilizing standard protocols and measurements; and discuss case studies, current literature, and registry examination material.

Required Textbooks

Claudia Rumwell & Michalene McPharlin (2015).Vascular Technology, An Illustrated Review (5th ed.). [ISBN: 0-941022-85-4]

Evaluation Standards

Exams (Objectives I-IV)	**40%**
Quizzes/Homework (Objectives I-IV)	**20%**
Scan Labs	**20%**

Final Exam (Objectives I-IV) **20%**

Grading Standards

• A	92-100%
• B	85-91%
• C	78-84%
• F	<78%

Course Progression

1. Describe Arterial Evaluation with emphasis on non-imaging evaluation of the following: (F1, 2, 4, 5. 7, 8, 9, 10, 11, C1, 3, 7, 10, 11, 12, 13, 14, 15, 18, 19)
    1. Patient history, mechanisms of disease, and physical examination
    2. Doppler waveform analysis in the upper and lower extremities
    3. Doppler segmental pressures-lower extremities
    4. Doppler segmental pressures-upper extremities
    5. Laser Doppler
    6. Penile pressures and waveforms, duplex/color flow imaging evaluation
    7. Plethysmography-upper and lower extremities
    8. Digital pressures and plethysmography
    9. Transcutaneous oximetry
    10. Duplex scanning and color flow imaging of the upper and lower extremities
    11. Duplex scanning and color flow imaging of the abdominal vessels
    12. Preoperative mapping procedures

13. Other conditions
14. Invasive tests and therapeutic intervention.
15. Pathology
16. Case studies

2. Demonstrate knowledge of Venous Evaluation with emphasis on non-imaging evaluation of the following:
    1. (F1, 2, 4, 5. 7, 8, 9, 10, 11, C1, 3, 7, 10, 11, 12, 13, 14, 15, 18, 19)
3. 1. Patient history, mechanisms of disease, and physical examination
    2. Impedance plethysmography
    3. Strain gauge plethysmography
    4. Photoplethysmography
    5. Air plethysmography
    6. Continuous wave Doppler
    7. Duplex scanning and color flow imaging
    8. Invasive tests and therapeutic intervention
    9. Pathology
    10. Case studies.

3. Demonstrate knowledge of Cerebrovascular Evaluation of the following: (F1, 2, 4, 5. 7, 8, 9, 10, 11, C1, 3, 7, 10, 11, 12, 13, 14, 15, 18, 19)
    1. Periorbital Doppler
    2. Occulopneumoplethysmography
    3. Carotid duplex scanning and color flow imaging
    4. Transcranial Doppler
    5. Other evaluations
    6. Pathology
    7. Case studies

4. Describe test validation, statistics, and patient safety of the following: (F1, 2, 4 5. 7, 8, 9, 10, 11, C1, 3, 7, 10, 11, 12, 13, 14, 15, 18, 19)
    1. Statistics profile and correlation
    2. Patient safety and infection control.

Absences

Your attendance is the biggest predictor of your success. Attendance at every class is expected. The student will be allowed to miss 3 class days (exception test days) without it adversely affecting their grade and 2 lab days (exception check-off days) without it adversely affecting their grade. Every one absence over the allotted days will result in the student's final grade being reduced by one letter grade. If the student is more than 15 minutes late to lecture or lab, this will constitute an absence. Three tardies count as one day absent. You are required to call the instructor prior to any absence. Failure to do so will result in an unexcused absence.

An exam missed because of an excused absence must be made up the day that the student returns to class. An exam missed because of an unexcused absence may *not* be made up, and the student will receive a grade of zero (0) for that exam. Quizzes may not be made up under any circumstances.

Except in the case of an excused absence, no late homework will be accepted. All students must achieve a minimum of 78% or higher to pass this course.

Cell phones shall be stored on silent in your backpack, handbag, or purse. Cell phones may be accessed during breaks.

A student shall retain all rights to work created as part of instruction or using College District technology resources.

Disabilities

ADA Statement:

Any student with a documented disability (e.g. learning, psychiatric, vision, hearing, etc.) may contact the Office on the Weatherford College Weatherford Campus to request reasonable accommodations. *Phone:* 817-598-6350 *Office Location:* Office Number 118 in the Student Services Building, upper floor. *Physical Address:* Weatherford College 225 College Park Drive Weatherford, TX.

Academic Integrity
Academic Integrity is fundamental to the educational mission of Weatherford College, and the College expects its students to maintain high standards of personal and scholarly conduct. Academic dishonesty of any kind will not be tolerated. Academic dishonesty includes, but is not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials including unauthorized use of Generative AI. Departments may adopt discipline specific guidelines on Generative AI usage approved by the instructional dean. Any student who is demonstrated to have engaged in any of these activities will be subject to immediate disciplinary action in accordance with institutional procedures.
SCANS

The Secretary's Commission on Achieving Necessary Skills (SCANS) identified Competencies in the area of Resources, Interpersonal, Information, Systems, and Technology; and foundation skills in the areas of Basic Skills, Thinking Skills, and Personal Qualities. This course is part of a program in which each of these Competencies and skills are integrated. The specific SCANS Competencies that are recognized throughout this course are noted at the end of the appropriate Competencies or task listed.