

Introduction to Vascular Technology (DSVT 1103)



Credit: 1 semester credit hours (1 hours lecture, 1 hour lab)

Prerequisite/Co-requisite: Passed all previous general and/or cardiac sonography courses.

Course Description

Introduction to basic non-invasive vascular theories. Emphasizes image orientation, transducer handling, and identification of anatomic structures.

Required Textbook and Materials

1. Techniques in Noninvasive Vascular Diagnosis by Robert J. Daigle, BA, RVT
ISBN# 978-0-9720653-6-8
2. Vascular Technology: an Illustrated Review by Claudia Rumwell, RN, RVT,
FSVT; Michalene McPharlin, RN, RVT, FSVT ISBN# 0-941022-45-5

Course Objectives

Upon completion of this course, the student will be able to:

1. Describe fundamental vascular concepts of duplex and non-imaging procedures including positioning the patient, equipment, and other devices. (SCANS: F1, F2, F3, F4, F5, F6, F10, F11, F12, C5, C11, C12, C18)
2. Identify vascular anatomy including abdominal, upper and lower extremity arterial and venous systems. (SCANS: F1, F2, F3, F4, F5, F6, F10, F11, F12, C5, C11, C12, C18)

SCANS Skills and Competencies

Beginning in the late 1980's, the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools*. In its research, the Commission determined that "workplace know-how" consists of two elements: Foundation skills and workplace competencies.

Course Outline

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|-----------------------------------------------------|-----------------------------------|
| A. Basic Vascular Structural and Functional Anatomy | b. Poiseuille's |
| a. Artery | c. High resistance waveforms |
| b. Vein | d. Low resistance waveforms |
| c. Lymphatic | C. Extra Cranial Arterial Anatomy |
| d. Portal System | a. Arch |
| B. Basic Arterial Hemodynamics | b. Carotid |
| a. Bernoulli's | i. Internal |
| | ii. External |

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- c. Vertebral
- d. Basic Patient Positioning
- D. Intra Cranial Anatomy
 - a. Anterior Circulation
 - b. Posterior Circulation
 - c. Circle of Willis
 - d. Scanning Windows
- E. Upper Extremity Arterial Anatomy
 - a. Forearm
 - b. Upper arm
- F. Central Arterial System Anatomy
 - a. Thoracic
 - b. Abdominal
 - c. Basic Patient Positioning
- G. Lower Extremity Arterial Anatomy
 - a. Lower leg anatomy
 - b. Upper leg anatomy
 - c. Basic Patient Positioning
 - d. Normal waveforms
- H. Basic Venous Information
 - a. Function
 - b. Structural Anatomy
- I. Lower Extremity Venous Anatomy
 - a. Superficial system
 - b. Deep system
 - c. Perforator system
- J. Central Venous System Anatomy
 - a. Abdominal
 - b. Thoracic
- K. Upper Extremity Venous Anatomy
 - a. Superficial system
 - b. Deep system

Grade Scale

93 – 100	A
85 – 92	B
75 – 84	C
68 - 74	D (not passing)
73.5 or below	F

Course Evaluation

Unit Exams	90%
Lab Exercises	10%.

Course Requirements

1. Workbook
2. Reading assignments
3. Scan Proficiencies (Lab)

Course Policies

1. No food, drinks, or use of tobacco products in class.
2. Beepers, cell phones, head phones and any other electronic devices must be turned off while in class.
3. Do not bring children to class.

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4. If a unit test is missed, arrangements will be made with the instructor to take the test in a timely manner.
5. Attendance Policy: Absences must be limited to serious illness and/or immediate family emergencies. Unexcused absences are not allowed. Three (3) absences will result in a letter grade reduction.
6. Tardiness is discouraged. Excessive tardiness (more than 10 minutes/class) (or more than 2 consecutive classes) will result in an absence being awarded.
7. In the event that LIT is forced to cancel classes due to inclement weather, DMSO/DSAE classes and clinical rotations will also be cancelled. Notification of closures will be made through local radio and TV stations.
8. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule

Week of	Topic	Reference
Week 1	Basic Vascular Structural and Functional Anatomy	Rumwell: pgs. 11-17; Daigle: pgs. 79-80,84, 86-89
Week 2	Basic Arterial Hemodynamics	Rumwell: pgs. 11-18, 43-52, 127-120, 175-181; Daigle: pgs. 141-144
Week 3	Test 1	
Week 4	Extra Cranial Arterial Anatomy	Rumwell: pgs. 121-123, 144-153, 162-163 Daigle: pgs. 24-27, 37-42, 71-72
Week 5	Intra Cranial Anatomy	Rumwell: pgs. 123-127, 137, 157-158 Daigle: pgs. 261-264
Week 6	Upper Extremity Arterial Anatomy	Rumwell: pgs. 1-4, 85-87 Daigle: pgs. 225, 236-238
Week 7	Test 2	
Week 8	Central Arterial System Anatomy	Rumwell: pgs. 4-7, 96-106 Daigle: pgs. 283-290, 293-295
Week 9	Lower Extremity Arterial Anatomy	Rumwell: pgs. 7-10, 90-93 Daigle: pgs. 148, 199-203, 206-207
Week 10	Test 3	
Week 11	Basic Venous Functional and Structural Anatomy	Rumwell: pgs. 175-181 Daigle: pgs. 84, 86-89

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Week of	Topic	Reference
Week 12	Lower Extremity Venous Anatomy	Rumwell: pgs. 169-174 Daigle: pgs. 79-83
Week 13	Test 4	
Week 14	Central Venous System Anatomy	Rumwell: pgs. 174-175 Daigle: pgs. 299, 296
Week 15	Upper Extremity Venous Anatomy	Rumwell: pgs. 173-174 Daigle: pgs.127-134, 139
Week 16	Test 5	