

Intro to Echocardiography Techniques (DSAE1303)



Credit: 3 semester credit hours (3 hours lecture, 2 hours lab)

Prerequisite/Co-requisite: Acceptance into the cardiac Sonography program.

Course Description

An introduction to scanning techniques and procedures with hands-on experience in a lab setting. Emphasis is placed on the sonographic explanation of the normal adult heart..

Required Textbook and Materials

1. ULTRA P.A.S.S. Adult Echocardiography Workbook by Patrick Coon, RDCS, RVT, FASE
 - a. ISBN# 978-1-9348664-16-6

Course Objectives

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

1. Demonstrate proper routine scanning techniques on normal subjects. (SCANS: F1, F2, F4, F5, F6, F10, F11, F12)
2. Demonstrate appropriate and accurate measurements in each modality. (SCANS: F1, F2, F4, F5, F6, F10, F11, F12, C5)
3. Describe the features of a normal echocardiogram. (SCANS: F1, F2, F4, F5, F6, F10, F11, F12, C5)
4. Demonstrate appropriate scan ergonomics and patient care and positioning. (SCANS: F1, F2, F4, F5, F6, F10, F11, F12)

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

- A. Cross sectional anatomy of the thorax
 - a. Chest cavity
 - i. Bony thorax
 - ii. Lungs
 - iii. Mediastinum
 - iv. Heart
 - v. Breast
 - b. Anatomy of the heart

DSAE 1303
Course Syllabus
Summer III 2010

- i. pericardium
 - ii. Chambers
 - iii. Valves
 - iv. Great vessels
 - v. Coronary circulation
- c. Physiology of the heart
 - i. Blood flow through the heart and lungs
 - ii. Phases of the cardiac cycle
- d. Pulmonary vs. systemic circulation
- e. Echocardiographic abbreviations
- f. Echocardiography windows and imaging planes
 - i. Parasternal
 - ii. Apical
 - iii. Subcostal
 - iv. Suprasternal
- g. Normal echocardiographic measurements
 - i. Aortic root
 - ii. Aortic cusp separation
 - iii. Cardiac chambers
 - iv. Cardiac walls
- h. Technique
 - i. Knobology – (specific to echo) – Mostly taught in intro to Sonography.
 - ii. Artifacts – (specific to echo) – Mostly taught in intro to Sonography.
- i. Ergonomics
 - i. Patient positioning
 - ii. Sonographer technique and positioning

Grade Scale

93 – 100	A
85 – 92	B
75 – 84	C
68 - 74	D (not able to continue in sonography program)

Course Evaluation

Semester grades will be calculated from the following criteria:

- | | | |
|----|------------|-----|
| 1. | Unit tests | 30% |
| 2. | Final Exam | 70% |

Course Requirements

1. Unit tests
2. Reading assignments
3. Worksheets

DSAE 1303

Course Syllabus
Summer III 2010

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.
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	Topic	Reference
Week 1	Cross sectional anatomy of the thorax	ULTRA PASS: pgs. 183-186 OTTO: pgs. 182-210
Week 2	Cross sectional anatomy of the thorax	Handout
Week 3	Cross sectional anatomy of the thorax	Handout
Week 4	Cross sectional anatomy of the thorax	Handout
Week 5	Test I	
Week 6	Anatomy and physiology of the heart	ULTRA PASS: pgs. 11-20 OTTO: pgs. 30-63
Week 7	Anatomy and physiology of the heart	ULTRA PASS: pgs. 11-20 OTTO: pgs. 30-63
Week 8	Test II	
Week 9	Echocardiographic abbreviations	OTTO: pgs. xi-xii

DSAE 1303
Course Syllabus
Summer III 2010

Week	Topic	Reference
Week 10	Echocardiographic windows and normal measurements	ULTRA PASS: pgs.64-68 OTTO: pgs. 1-30
Week 11	Ergonomics	ULTRA PASS: 64-68 OTTO: pgs. 1-30
Week 12	Test III	

Contact Information

Instructor: Judy Tinsley
Office: Rm. 208, MPC
Telephone: (409) 839-2924
E-mail: judy.tinsley@lit.edu
Office hours: Vary and by appointment