

Echocardiographic Evaluation of Pathology I (DSAE 2304)



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

Prerequisite/Co-requisite: Passed all previous sonography courses.

Course Description

Adult acquired cardiac pathologies. Topics include cardiovascular pathophysiology, quantitative measurements, and the application of 2-D, M-Mode, and Doppler. Recognition of the sonographic appearances of cardiovascular disease is stressed.

Required Textbook and Materials

1. The Notebook 6.5 edition, by Susan King DeWitt, BS, RDCS, RCS
<http://echocardiographer.tripod.com>

Course Objectives

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

1. Describe the etiology, signs and symptoms, treatment and echocardiographic features of common valvular and myocardial diseases.
2. Discuss the criteria for recognition, evaluation and quantification of these diseases.
3. Identify pathophysiology and hemodynamic consequences.

Course Outline

- A. LIT
 - a. Policies
 - b. Academic calendar
 - c. Classroom policies
- B. Schedules
 - a. Lab schedule
 - b. Clinical schedule
 - c. Review previous semester cardiac anatomy and physiology.
 - d. Advanced cardiac anatomy and Physiology
 - e. Cardiac cycle
 - f. Cardiac Hemodynamics
 - g. Cardiac Doppler
 - h. Doppler equation
 - i. Doppler Quantification

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Course Syllabus

- C. Cardiac Physiology
 - a. Effects of abnormal pressures and loading
 - i. Volume concepts
 - ii. Afterload
 - iii. Preload
 - iv. Frank Starling's Law
- D. Physiological response of cardiac chambers to the following:
 - a. Increased volume
 - i. Preload (varying preload conditions)
 - ii. Frank Starling Law
 - b. Increased pressure
 - i. Afterload (varying afterload conditions)
 - ii. Hypertrophy
 - c. Pulmonary vascular disease
- E. Normal and Abnormal hemodynamics and flow patterns.
 - a. Miscellaneous measurements specific to patient history.
- F. Ventricular systolic function
 - a. Ejection Fraction
 - b. Simpson's method
- G. Ventricular diastolic function
 - a. Chamber size
 - b. E to A ratio
 - c. PISA
 - d. Pulmonary veins
 - e. Tissue Doppler
- H. Heart failure
- I. Ischemic Heart Disease
- J. Hypertensive heart

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/Final 60%
(Unit tests worth 80%/ Final Exam 20%)
2. Research/Power Point Project 10%
3. Homework 5%
4. Lab Participation 25%
(25% lab grade will be scan tests/25% will be lab participation/50% will be Final Semester Scan)

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Course Syllabus

Course Requirements

1. Unit tests
2. Reading assignments
3. Worksheets
4. Class Presentation

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. Excessive tardiness (more than 10 minutes/class or more than 2 consecutive classes)** will result in an absence being awarded. In the event that LIT is forced to cancel classes due to inclement weather, DMS classes and clinical rotation will also be canceled. Notification of closures will be made through local radio and TV stations. Students out of the immediate broadcast area should contact the Program Director for information. **It is extremely important that students communicate with the faculty regarding absences by telephone and/or email at all times.**
6. All assignments are due when stated. Late assignments will result in a drop of **10** points per late day, and more than five days past due will result in a grade of **0**. If a student has an excused absence with written documentation, assignments will be accepted at the beginning of class upon return. Missed in-class assignments receive a grade of **0**.
7. Cheating on any (lecture/lab) exam results in immediate dismissal from the program and an **F** for the course.
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	Course introduction: Policies Lab/clinical schedules	
Week 2	Review of Fall semester	Power points from Fall semester
Week 3	Cardiac Physiology	The Notebook pgs. 21-30
Week 4	Test 1	
Week 5	Ventricular systolic function	Power point
Week 6	Ventricular systolic function	Power point
Week 7	Ventricular systolic function	Power point
Week 8	Ventricular systolic function	Power point
Week 9	Test II	
Week 10	Ventricular diastolic function	Power point
Week 11	Ventricular diastolic function	Power point
Week 12	Ventricular diastolic function	Power point
Week 13	Ventricular diastolic function	Power point
Week 14	Test 3	
Week 15	Heart failure/Ischemic Heart Disease/ Hypertensive heart	The Notebook pgs. 247-253
Week 16	Test 4	

Contact information:

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