

LABETTE COMMUNITY COLLEGE BRIEF SYLLABUS

SPECIAL NOTE:

This brief syllabus is not intended to be a legal contract. A full syllabus will be distributed to students at the first class session.

TEXT AND SUPPLEMENTARY MATERIALS USED IN THE COURSE (if any):

Please check with the LCC bookstore <http://www.labette.edu/bookstore> for the required texts for this class.

COURSE NUMBER: DMS 249

COURSE TITLE: ECHOCARDIOGRAPHY BOARD REVIEW

SEMESTER CREDIT HOURS: 2

DEPARTMENT: DMS

DIVISION: Health Science

PREREQUISITES: Strongly recommend having DMS 214 Introduction to echocardiography. Previous ultrasound training is recommended.

REVISION DATE: 12/13/2013

COURSE DESCRIPTION:

This course is designed as a continuation of the DMS 214 Introduction to Echocardiography course. This course is didactic only and has no clinical part. The student will be required to fulfill the clinical aspect required by ARDMS. The course will include pictures, some videos, and test questions to help prepare the student for the national echocardiography boards. The course is set up to match the echocardiography outline presented by ARDMS.

COURSE OUTCOMES AND COMPETENCIES:

Students who successfully complete this course will be able to:

1. Identify the normal anatomy of the heart and major vessels.
 - Compare and contrast the anatomy of aorta and venae cavae in a cross-sectional plane.
 - Describe the coronary arterial system of the heart.
 - List the layers of the heart wall.
 - Describe the heart structures in relation to their anatomical location.
 - Identify the embryology of the heart, beginning with the primitive heart tube through the development of the six aortic arches.
 - Discuss septation into atrial and ventricular chambers.
 - Compare and contrast fetal postnatal circulation.

2. Describe the normal echocardiogram examination and identify normal ventricular function.

- Apply pertinent Doppler formulas to the cardiac exam.
- Describe a normal 2-D echocardiographic examination.
- Identify all normal anatomy visualized on an echocardiogram.
- Explain the appearance of echocardiographic artifacts on an image.
- Classify the types of wall motion abnormalities.
- Differentiate methods to assess global left ventricular and regional left ventricular function.
- Compare the determinants of left ventricular function.

3. Apply Principles of Cardiac Hemodynamics and Cardiac Cycle.

- Recite the factors that affect blood flow.
- Discuss the relationship between pressure and velocity as it relates to the Bernoulli equation.
- Describe clinical applications and pitfalls of common cardiac Doppler hemodynamics.
- Compare electrocardiographic events to phases of the cardiac cycle.
- Explain spectral Doppler physiology as it relates to blood flow.
- Define the Frank-Starling law.
- Distinguish stroke volume, cardiac output, ejection fraction, and cardiac index.

4. Evaluate Coronary Artery disease, cardiomyopathies, hypertension, and different types heart evaluation.

- Discuss coronary abnormalities and their associated echocardiographic features.
- List common causes of Valvular heart disease.
- Relate common complications of prosthetic valves.
- Label three forms of cardiomyopathy.
- Identify the physiology of systemic hypertensive disease.
- List classifications of pulmonary hypertension.
- Discuss the role of stress echocardiography for myocardial disease.
- Determine the value of exercise versus pharmacologic stress echocardiography.
- Describe the purpose and protocol of transesophageal echocardiography.
- List clinical indications for 3-D/4-D imaging.

5. Identify pericardial diseases, cardiac tumors, diseases of the aorta, electrical activation, and congenital heart disease.

- Describe key echocardiographic features in pericardial effusion.
- Discuss the normal anatomy and function of the pericardium.
- Recite Doppler criteria associated with cardiac tamponade and constrictive pericarditis.
- Identify key echocardiographic features of congenital absence of the pericardium.
- List etiologies of pericardial disease.