



BAKER COLLEGE
STUDENT LEARNING OUTCOMES

CAS1210 Introduction to Echocardiography
4 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Identify basic terminology and abbreviations associated with cardiac ultrasound and pathology.
2. Review knowledge of basic cardiac anatomy, circulation and the cardiac cycle.
3. Identify general cardiac conditions and disease states:
 - a. Describe stenosis and insufficiency
 - b. Describe hypertrophy and dilatation.
 - c. Describe hypertension.
 - d. Describe shunts.
 - e. Describe aortic aneurysms.
 - f. Describe pressure and volume overloads.
 - g. Describe ischemic disease.
 - h. Describe heart failure and cardiomyopathies.
4. Explain by location and name, all of the cardiac wall segments according to the American Society of Echo (ASE), on diagrams, heart models and specimens.
 - a. Identify wall segment names.
 - b. Identify coronary artery territories.
5. Identify by name and location, correct echo windows and transducer locations.
 - a. Identify the parasternal window.
 - b. Identify the apical window.
 - c. Identify the subcostal window.
 - d. Identify the suprasternal notch window.
6. Compare the various modes in echo testing, function of each, and the advantages and disadvantages of each.
 - a. Describe M-mode including the aortic valve (AV), mitral valve (MV), and left ventricular (LV) areas.
 - b. Describe 2D.
 - c. Describe Doppler and color flow Doppler (CFD).
7. Classify by name and location, the basic 2D scan planes and transducer manipulation required to obtain each.
 - a. Explain the PLAX/ LV, RVIT, RVOT.
 - b. Explain the PSAX / AV, MV, PM, Apex.
 - c. Explain the Apical / 4, 5, 2, Lax.
 - d. Explain the subcostal / 4, SAX, IVC.
 - e. Explain the suprasternal notch / LAX, SAX

8. Explain the basic instrumentation of the echo machine.
 - a. Demonstrate the function of the keyboard.
 - b. Demonstrate the function of the depth/zoom.
 - c. Demonstrate the function of the ECG.
 - d. Demonstrate the function of the recording/printing.
 - e. Demonstrate the function of the focal zones.
 - f. Demonstrate the function of the filters.
9. Explain the basic gain controls.
 - a. Demonstrate the function of the near and far field.
 - b. Demonstrate the function of the compress.
 - c. Demonstrate the function of the TGC controls and compensation.
 - d. Demonstrate the function of the dynamic range.
 - e. Demonstrate the function of the controls specific to each mode.
10. Perform measurements at the AV, MV and LV levels.
 - a. M-mode
 - b. 2D
11. Explain the function and purpose of cardiac Doppler testing.
 - a. Demonstrate basic velocity and gradient calculation.
 - b. Differentiate between pulse wave (PW) and continuous wave (CW) Doppler, its uses, advantages and disadvantages.
12. Explain reasons for a CFD exam including advantages and disadvantages.
13. Identify several classifications in which some disease states are more prevalent by either race, age, gender or geographic location.

These SLOs are/are not approved for experiential credit.

Effective: Summer 2018