



# BAKER COLLEGE

## STUDENT LEARNING OUTCOMES

CAS2310 Clinical Affiliation II  
6 Semester Hours

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### Student Learning Outcomes and Enabling Objectives

1. Demonstrate the use of controls on the ultrasound equipment.
  - a. Demonstrate data entry and menus.
  - b. Demonstrate transducer selection and multifrequency probe use.
  - c. Demonstrate gain controls and image quality.
  - d. Demonstrate m-mode/2D controls.
  - e. Demonstrate gray scale and pre/post processing controls.
2. Demonstrate Doppler and color flow Doppler (CFD) controls.
  - a. Demonstrate proper gain adjustment.
  - b. Demonstrate proper scale and filter adjustment.
  - c. Demonstrate proper baseline shift.
  - d. Demonstrate the use of various color maps.
3. Demonstrate appropriate use of recording controls to properly clip digital images for review.
4. Demonstrate accurate calculation/measurement on 2D and m-mode to include distance, thickness diameter, and area calculations.
5. Interpret various Doppler flow patterns.
  - a. Identify normal flows.
  - b. Identify inflow/outflow/valve flows.
  - c. Identify insufficiencies and stenosis.
  - d. Identify shunts.
6. Demonstrate Doppler measurements and calculations.
  - a. Demonstrate velocities and mean/max gradients.
  - b. Demonstrate pressure half time (PHT) calculation.
  - c. Demonstrate valve areas including use of the continuity equation.
7. Demonstrate the ability to correctly choose between PW and CW, based on flow being interrogated and patient pathology.
8. Demonstrate the use of "blind" pedoff Doppler probe.
  - a. Demonstrate valve flows.
  - b. Demonstrate ascending and descending Aorta flow.
  - c. Demonstrate the use of right parasternal and SSN window.
9. Interpret advanced pathology cumulative to program and current course material.
  - a. Describe pericardial disease and effusions.
  - b. Describe masses and tumors.
  - c. Describe cardiomyopathies and ischemic disease.

- d. Describe altered electrical findings in echo.
  - e. Describe systolic & diastolic dysfunction.
  - f. Describe congenital heart disease (CHD).
  - g. Describe a right heart protocol.
10. Explain echo specialty tests.
- a. Interpret stress and Dobutamine echo exam.
  - b. Interpret transesophageal echo (TEE).
  - c. Interpret contrast echo.
  - d. Interpret 3D echo.
  - e. Interpret strain imaging.
11. Demonstrate a complete m-mode/2D/Dop/CFD exam to include all routine views, modes, and measurements according to standard protocol.
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These SLOs are approved for experiential credit.

**Effective: Fall 2017**