# BAKER COLLEGE
# STUDENT LEARNING OUTCOMES

**CAS2150 Fundamentals of Cardiac Sonography**

**13 Semester Credit Hours**

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## Student Learning Outcomes and Enabling Objectives

1. Demonstrate professional communication skills.
   a. Apply verbal and non-verbal communication skills to professional situations.
2. Examine proper ergonomics techniques for sonographers.
   a. Explain the role of proper ergonomics in sonography safety.
   b. Demonstrate proper ergonomic techniques.
3. Explore the cardiac auscultation exam.
   a. Identify auscultation areas.
   b. Identify normal heart sounds.
   c. Explain what is a murmur.
4. Explore cardiac disease states.
   a. Compare symptoms, causes and treatments of different cardiac disease states.
5. Interpret valvular heart disease.
   a. Identify causes of valvular heart disease.
   b. Explain clinical findings, symptoms, and treatments.
   c. Identify echo views and measurements needed to evaluate each disease.
   d. Grade severity of valvular disease based on echo findings.
6. Evaluate aortic valve disease.
   a. Differentiate between sclerosis and stenosis.
   b. Identify aortic insufficiency.
   c. Compare and contrast calcific, rheumatic, and congenital aortic stenosis.
   d. Identify supra and sub valvular stenosis forms.
7. Evaluate Aortic Root Disease.
   a. Identify aortic root aneurysms, dissections, and dilatation.
8. Evaluate Mitral Valve Disease.
   a. Compare and contrast calcific, rheumatic and congenital mitral stenosis.
   b. Differentiate between MAC and MS.
   c. Identify MVP.
   d. Identify Mitral regurgitation.

    e.   Identify Flail MV leaflets.
9. Evaluate right heart valves disease.
    a.   Identify tricuspid stenosis and insufficiency.
    b.   Identify pulmonic stenosis and insufficiency.
10. Demonstrate calculation of aortic valve area.
    a.   Obtain quality Doppler traces of LVOT and AV.
    b.   Perform required measurements for continuity equation.
11. Demonstrate basic 2D, M-mode, doppler exam.
    a.   Obtain quality 2D views from parasternal, apical, subcostal and SSN windows.
    b.   Obtain quality M-mode traces of AV, MV, LV.
    c.   Obtain quality Doppler traces of AV, MV, TV and PV.
    d.   Perform accurate measurements as required.

# Big Ideas and Essential Questions

## Big Ideas
- Professional communication
- Ergonomics
- Heart sounds
- Cardiac Disease states
- Valvular disease process
- Valvular disease measurements
- Aortic valve disease
- Aortic Root disease
- Mitral valve disease
- Tricuspid valve disease
- Pulmonic valve disease
- 2D, M-mode and doppler exam
- Continuity equation

## Essential Questions
1. How do you properly perform a quality 2D, M-mode and doppler exam?
2. What role does ergonomics play in sonography?
3. Why is it important to have professional communication in healthcare?
4. How are heart sounds and doppler affected by disease states?
5. How does the sonographer evaluate for different valvular diseases?
6. What are the views and measurements required for each disease process?
7. How does valvular disease affect heart hemodynamics?

These SLOs are not approved for experiential credit.

**Effective: Fall 2023**