Print Date: 7/31/14

Course Objectives/Course Outline
Spokane Community College

Course Title: **Echo Fundamentals**
Prefix and Course Number: **VASC 133**

Course Description:

Introduction to the basic principles and application of the echocardiographic procedures. The physical principles, anatomy, and clinical applications of cardiac ultrasound are emphasized. Laboratory experiences are provided.

Course Learning Outcomes:
By the end of this course, a student should be able to:

- Identify gross and cross-sectional cardiac anatomy that is imaged using cardiac ultrasound.
- Relate cardiovascular hemodynamics and cardiac physiology to cardiac ultrasound images and blood flow patterns.
- Relate the physical principles of ultrasound to ultrasonic imaging of the heart and cardiovascular system.
- Apply the principles of ultrasonic instrumentation to obtain cardiac ultrasound images.
- Identify cardiac anatomy as viewed in ultrasound images of the heart. (M-mode, Transthoracic, Transesophageal)
- Apply the principles of Doppler echocardiography (PW, CW, CFI) to the assessment of blood flow through the heart.
- Apply the principles of cardiac ultrasound in the qualitative and quantitative assessment of normal and abnormal cardiac anatomy and hemodynamics.

Course Outline:

I. Cardiac Anatomy (Gross and Cross-sectional)
II. Physical Principles and Instrumentation of ultrasound
III. Echocardiographic Imaging (M-mode, TTE, TEE)
IV. Doppler Echocardiography, Principles and Instrumentation
V. Introduction to Clinical Application