

**Course Objectives/Course Outline**  
**Spokane Community College**

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**Course Title: Ultrasound Physics and Instrumentation**

**Prefix and Course Number: SONO 135**

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**Course Learning Outcomes:**

**By the end of this course, a student should be able to:**

This is a continuation of the concepts introduced in SONO 125. Ultrasound physics with emphasis on the Doppler techniques, artifacts, and utilizing instrumentation to investigate the principles of Doppler technique and artifacts.

- Apply the principles of Doppler ultrasound when utilizing PW, CW, HPRF and color flow techniques.
- Identify the various artifacts present in ultrasound imaging.
- Describe the Bioeffects of ultrasound
- Describe the utilization of contrast and harmonic imaging and the effects of instrumentation settings.
- Utilize imaging phantoms to develop quality assurance program.
- Utilize the principles of fluid dynamics and hemodynamics in the analysis of ultrasonic imaging.

***COURSE OUTLINE***

- I. Doppler techniques
- II. Artifacts
- III. Bioeffects of Ultrasound
- IV. Contrast and Harmonics
- V. Quality assurance
- VI. Fluid dynamics and Hemodynamics
- VII.