

# WSI 210 - UNDERWATER ACOUSTICS AND SONAR

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## Course Description

This course provides a foundation for the use of acoustics in the marine environment while focusing on best practices for underwater search, survey and visualization programs. Multiple sonar systems are presented and are representative of current industry equipment, operations and practices. Emphasis is placed on understanding field applications where sonar platform, water depth and temperature, target range and size, acoustic frequency and object reflectivity/absorption have an effect on target detection, resolution and data accuracy. Group 2 course.

## Credit Hours

3

## Contact Hours

4

## Lecture Hours

2

## Lab Hours

2

## Required Prerequisites

MTH 111 or higher

## Recommended Prerequisites or Skills Competencies

PHY 105, Placement into ENG 111

## Course Learning Outcomes

### Knowledge:

- Identify best practices for deploying sonars in the marine environment.
- Define the common sonar terminology.

### Application:

- Develop interpretive skills from analyzing sonar returns.

### Integration:

- Analyze collected sonar information.

### Human Dimension:

- Interpret a new dimension of the subsurface world through sonar investigations that can lend insight to human induced impacts underwater.
- Discover that interpretation of what they see is based on human perception.

### Caring - Civic Learning:

- Evaluate underwater arenas including infrastructure and the condition of marine habitats.

### Learning How to Learn:

- Discover the power of sound and its ability to "see" targets underwater.