WSI 315 - ADVANCED MARINE SURVEY & DATA

Course Description

This course provides a foundation in the coordination of maritime surveys from a pre-deployment standpoint. Students will be expected to have a strong understanding of the remote sensing science including capabilities and limitations of the sensor systems to be used. A major focus of the course will be to develop student skillsets for processing and merging marine and terrestrial datasets from a wide range of sources and systems. Significant time will be devoted to proper manipulation of data using commercial and freely-available tools. Group 2 course.

Credit Hours

3

Contact Hours

4

Lecture Hours

2

Lab Hours

2

Required Prerequisites

WSI 215

Recommended Prerequisites or Skills Competencies

WSI 300

Course Learning Outcomes

Knowledge:
- Develop an understanding of the methods used to plan a marine data collection.
- Accommodate the limitations of various sensors used in the study of marine environments.
- Develop a deeper understanding of how energy propagates in different spectrums and media.

Application:
- Identify practical uses for acoustic sonars (marine and terrestrial), LIDAR systems, and visible/multispectral/hyperspectral sensors, including processing results.

Integration:
- Employ knowledge of various sensors to combine data from different sources, generating continuous results of overlapping collection areas.
- Utilize sensor results to prepare effective visuals for communication purposes.

Human Dimension:
- Consider how different people interpret color and other cartographic techniques.

Caring - Civic Learning:
- Understand how to safely deploy and use various sensors in ways that do not adversely impact the environment being measured.

Learning How to Learn:
- Determine where Survey Planning and Advanced Marine Data Processing apply to real-world applications.