

Course: EW309 Guided Design Experience

Credits: 2 credits – 0 recitation hours – 4 laboratory hours

Course Description: Students pursue a semester-long structured and guided engineering design project, starting from a problem statement and carrying through to a final prototype design. Working in small groups, students participate in a project-based-learning exercise through which they develop the breadth of technical experience required for open-ended design on the large scale.

Pre-requisites: EW305 or EW305H, EW301, & SM316

Course Coordinator: CAPT Tracie Severson

Textbook: None

Course Objectives:

Develop and execute a formal test plan to acquire experimental data.

Apply appropriate analysis techniques for interpretation of measured data.

Perform appropriate research on components to span a design space.

Make informed decisions for parts selection.

Analyze and design a control system to meet the needs of a project.

Apply basic computer vision methods through MATLAB.

Foster a preliminary understanding of and appreciation for the engineering design process.

Provide a framework for exercise and integration of the components of the robotics and control engineering curriculum into a complete project.

Enhance hands-on skills.

Topics:

Problem Statement and Background Research

Computer Vision

Circuit Development

System Modeling

System Control

Ballistics Analysis

System Integration

System Test

Last Updated: 22-December-2020