THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Experimental Projects I

AEROENG 4510

Credit Hours:
2.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture
Recitation

Course Description:
Conceive, plan and design an experiment with a group of students. Emphasis on planning and experiment preparation.

Prerequisites and Co-requisites:
Prereq: 3543 and 3570, and Sr standing, and enrollment as AeroEng-BS student (No pre-majors can enroll in this class).

Course Goals / Objectives:

- Develop as a team the strategy and tactics for the design of an experiment and for data analysis procedures to achieve experimental objectives, including detailed description of the necessary technical tasks
- Formulate an experimental program and success criteria to obtain information for a particular problem
- Implement as a team a detailed design for an experiment and for data analysis procedures necessary to achieve the objectives defined above
- Effectively communicate orally and in writing the results of the project design process, and subsequently the key aspects of the overall project (from concept to end goal)
- GE Reflection-Engag Citizens & Intercultr Comp: Students consider public health, safety, and welfare as well as global, cultural, social, environmental, and economic factors in applying engineering design to produce solutions meeting specified needs
- GE Reflection - Personal and Professional Development: Students individually assess and pursue personal professional growth in concert with project requirements and personal career goals
- GE Reflection - Cultivate Engineering Mindset: Students develop an engineering mindset that demonstrates constant curiosity, makes connections between disparate bodies of information, and seeks opportunities to create value

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Course Topics:

- Introduction
- Ethics and Experimental Research Projects
- Hypothesis, Objective, Success Criteria
- How Writers and Speakers Plan Communication Strategy
- Experimental Design
- Literature Searches
- Test Matrices
- Experimental Measurement: Methods and Methodology
- Error Analysis
- Data Analysis
- Data Reduction
- Creating Effective Graphics
- Graphics that Present Data

Designation:

Required