



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Fundamentals of Engineering for Honors 2 - Integrated Business & Engineering

ENGR 1282.04H

Credit Hours:

3.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lecture

Lab

Course Description:

Introduction to 3D visualization and CAD; engineering design process; teamwork; written, oral and visual communications; project management. An alternative to the standard 1282.01H course with an emphasis on a product design project within the Integrated Business and Engineering (IBE) Honors program.

Prerequisites and Co-requisites:

Prereq: Honors standing, and 1281.01H or 1281.02H or 1281.03H or 1281.04H or permission of instructor, and enrollment in Integrated Business and Engineering (IBE) program.

Course Goals / Objectives:

- Students will understand and gain experience with the elements of engineering product design and business marketing planning
- Students will be able to visualize and present objects and systems in three-dimensions
- Student will have a basic proficiency with a modern 3D parametric solid modeling CAD tool (Solidworks)
- Students will develop professional skills for success in engineering and business, including teamwork and written, oral, and visual communications
- Students will have an introductory level knowledge of project management (e.g. scheduling, budgeting, reporting)
- Students will complete a term-length, design project which serves as a cornerstone experience. Project is to reinforce use of engineering problem solving, engineering & business plan documentation, graphics and visualization, and teamwork skills.

Course Topics:

- Course Overview
 - Engineering Design Process Fundamentals
 - Visualization of 3-D Objects (Sketching, Pictorials, & Orthographics)
 - Standard Views and Presentations of Objects
 - Construction of 3-D Objects with CAD
 - Conventions and Standards (Dimensioning, Tolerance, Sections)
 - Assembly and Presentation of Systems
 - Project Management
 - Project Documentation
 - Design Project Preparation Exercises
 - Design Project Preliminary Design (Project to make use of both Problem Solving and CAD knowledge)
 - Design Project Final Design (Project to make use of both Problem Solving and CAD knowledge)
 - Written and Oral Presentations
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Designation:

Elective