



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Fundamentals of Engineering for Honors II - Nanotechnology

ENGR 1282.02H

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. Alternative course with an emphasis on a nanotechnology research and development project.

Prerequisites and Co-requisites:

Prereq: Honors standing, and 1281.01H or 1281.02H or 1281.03H or 1281.04H, and enrollment in the College of Engineering; or permission of instructor.

Course Goals / Objectives:

- Understand and gain experience with the elements of engineering design
 - Be able to visualize and present objects and systems in three-dimensions
 - Have a basic proficiency with a modern CAD tool (Autodesk-Inventor)
 - Develop professional skills for success in engineering, including teamwork and written, oral, and visual communications
 - Have an introductory level knowledge of project management (e.g. scheduling, budgeting, reporting)
 - Complete a term-length, research and design project which serves as a cornerstone experience. Project is to reinforce use of engineering problem solving, engineering documentation, graphics and visualization, and teamwork skills
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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