



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Fundamentals of Engineering for Honors II - Robotics

## ENGR 1282.01H

**Credit Hours:**

3.00

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**Course Levels:**

Undergraduate (1000-5000 level)

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**Course Components:**

Lecture

Lab

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**Course Description:**

Introduction to 3D visualization and CAD; engineering design-build process; teamwork; written, oral and visual communications; project management. Standard course incorporating a robot design-build project.

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**Prerequisites and Co-requisites:**

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

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**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, design-build 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:**

Required