



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Engineering Graphics

ENGRTEC 1600

Credit Hours:

3.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lecture

Lab

Course Description:

Develop skills in graphic design and visualization through experience creating and interpreting 2D Computer Aided Drawings in AutoCAD. Explore various forms of technical graphics used in the field of Engineering Technology including facility layouts, piping and instrumentation diagrams, and electric schematics. Emphasis on utilizing technical graphics to solve Engineering Technology problems.

Course Goals / Objectives:

- Ability to use AutoCAD as a graphic design tool, understand the basic functions, be able to produce 2D drawings, multiple views for manufacturing production processes. Demonstrate proficiency using the program following the ASME Y14.5M standards.
 - Create working drawing using orthographic projections, section views, and auxiliary views. Create drawings using dimensions and tolerances. Create assembly drawings including bill of materials.
 - Ability to use AutoCAD to create and interpret facility layout drawings, Process & Instrumentation diagrams, and electrical schematics required for operation in a production facility.
 - Ability to design & communicate manufacturing processes graphically. Ability to use technical drawings, vendor equipment manuals, & external documents to understand the components of equipment and troubleshoot issues associated with that equipment
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Course Topics:

- Introduction to AutoCAD Commands
 - Creating and Manipulating drawings (Basic & Advanced Commands) using AutoCAD
 - Advanced Tools (Dimensioning, Line Types, Referencing)
 - Drawing Project 1 –Facility Layout
 - Drawing Project 2 –Piping and Instrumentation Diagram
 - Drawing Project 3 –Electrical Schematics
 - Project 4 –Written Communication: Use existing machine drawings to describe parts of equipment and how to use this for troubleshooting
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Designation:

Required