



Course Name: ENR-117 Computer-Aided Drafting I

Date Updated: 4/2022

Credit Hours/week: 2 hrs./wk. – 2 cr.

BEGINNING: SPRING 2022

Catalog Description: This course is an introduction to the concepts and operation of engineering drawing preparation using CAD (computer-aided drafting). The emphasis is on how CAD can reduce drawing time and improve accuracy. Students learn to use the AutoCAD software program to prepare drawings.

Prerequisite: None

Text: Terence M. Shumaker, AutoCAD and its Application Basics

Supplementary Material: None

Syllabus:

Text Sections	Topics
Chapter 1-3	Introduction to AutoCAD, Drawing & editing
Chapter 4	Basic Object Commands
Chapters 5-7	Line & layer Standards, View Tools and plotting, Object Snap & AutoTrack
Chapter 8	Construction Tools and Multi-view Drawings
Chapters 9-10	Text Styles, Multiline Text, Single Line Text, and Related Tools
Chapters 11-13	Modifying Objects, Arranging and Patterning Objects, Grips, properties and Additional Selection techniques
	Basic Dimensioning, Mid-Term
Chapters 14-15	Polyline and Spline editing Tools, Obtaining Drawing Information
Chapters 16-18	Dimension Standards and Styles, Linear and Angular Dimensioning, Dimensioning Features
Chapters 19-21	Tolerances, Editing Dimensions, Tables
Chapter 23	Section Views, Graphic Patterns
Chapters 24-25	Standard Blocks, Attributes, Titleblock Creation and Use
Chapters 28-30	Layouts, Plotting, Annotative Objects; Some Discussion related to External References
	Review; Discussion about Creation, Development, and Final Presentation of Drawings; Review
	Final

Students are expected to adhere to the policies of the County College of Morris. These can be accessed at: (insert link here)

Statement of Expected Course LEARNING OUTCOMES

- Discuss the application of graphics software in generating engineering drawings and explain the difference between 2D and 3D methods.
- Demonstrate AutoCAD screen layout setup, customize screen for an ANSI A -size drawing sheet, and discuss how pull-down menu as well as the ribbon toolbars are used in creating a drawing.
- Employ the absolute, relative, polar coordinate entry in generating various geometric entities and discuss usefulness of snap, grid, direct distant entry and track methods in Drawing figures.
- Demonstrate manipulation of objects by applying object snapping and modifying commands.
- Discuss writing text on the drawing sheet employing single line and multiple line text commands, and explain text editing techniques.
- Create a standard A-size sheet and develop a template for class use.
- Demonstrate the creation of layers, various line types with different line weights and assign colors to layers for visual clarity.
- Draw one view drawings on the template using arc, offset, array, trim, lengthen, chamfer and fillet commands.
- Develop the screen layout to draw half-scale and quarter-scale drawings.
- Construct two orthographic views of an object with the help of construction lines and various drawing and modifying commands.
- Demonstrate insertion of drawings into a template environment and create template for Drawing metric drawings.
- Explain dimensioning of drawings conforming to ASME specifications.
- Develop three orthographic views of an object with dimensions.
- Demonstrate sectioning of objects with relevant views.
- Discuss tolerancing of dimensions and creation of dimensional styles.