Course: AutoCAD 2D

Course Description

This module will introduce the students to the basic and advance techniques to solve drafting and design related problems. After the completion of this course, you will be able to use AutoCAD Commands to make a drawing, create text, and create blocks, dynamic blocks and so on.

Class and Lab hours:

25 (10 Theory, 15 Lab)

Prerequisite:

Need to be an architect/engineer /technologists with basic knowledge of Geometry concepts.

Course Objectives

Upon completion of the course, trainees/students will be able to:

1. *Create a basic 2D drawing in AutoCAD.*
2. *Use of productivity tools.*
3. *Plot a drawing.*

Detailed Course Outline

Unit Heading	Unit Outcomes	Unit Topics
1. Introduction	• Upon completion of this unit, the students are expected to: • Starting AutoCAD. • AutoCAD screen component. • Starting a new drawing. • Saving work. • Close a drawing.	• Introduction to AutoCAD and its role in various industries. • Why CAD preferred over manual drafting. • Difference between AutoCAD and AutoCAD LT. • Start, exit AutoCAD. • AutoCAD screen layout. • Application menu. • Introduction to various formats of file.
2. Getting started with AutoCAD	• Coordinate system. • Basic drawing and editing commands. • Object selection method.	• Absolute coordinate system. • Relative coordinate system. • Direct entry method. • Line and circle command. • Options and Properties. • Fence, Polygon, Polygon. • Erase command.
3. Start Advanced sketching and Editing-I.	• Advanced Drawing commands. • Advanced Editing Commands. • Status bar	• Rectangle, Polygon command. • Move, Copy, Offset, Rotate, Scale, Fillet, Chamfer. • Ortho, Snap, Object Snap and its setting.
4. Start advanced sketching and Editing-II and drawing aids.	• Advanced Drawing commands. • Advanced Editing Commands. • Layers introduction	• Ellipse, Arc, Construction line, Ray, Multiple points, Divide, Measure, Donut. • Mirror, Trim, Extend, Blend curves, Explode, Lengthen, Align, Break, Break at Point, Join. • Create new layer and assign color, line weight, line type, etc.
5. Start advanced sketching and Editing-III and drawing aids.	• Advanced Drawing commands. • Advanced Editing Commands. • Layers - II.	• Polyline, Spline, Region, Revision cloud, wipeout, 3D Polyline, Helix. • Array, edit, Polyline and Spline. • On/Off, freeze, Isolate/ Insolate, locking, matching, merge layers.

6. Create and modify annotations.	• Text. • Dimension. • Multi-leader. • Table.	• Single line and Multiline text. • Linear, Aligned, Angular, Arc length, Radius, Diameter, Jogged, Ordinate. • Add, Remove, Align, and Collect Leader. • Insert and Modify table
7. Concept of constraint and Tolerance	• Concept of constraint. • Geometric and Dimensional Constrain. • Concept of Tolerance. • Add Tolerance symbol in AutoCAD.	• Under, Fully, Over constraint concepts. • Geometric constraint - Coincident, Collinear, Concentric, Fix, Parallel, Perpendicular, Horizontal, Vertical, Tangent, Smooth, Symmetric, equal. • Dimensional Constraint -Linear, Horizontal, Vertical, Aligned, Radius, Diameter, Angular. • Form and orientation tolerance.
8. Hatching	• Concept of Hatch, gradient, Boundary. • Concept of annotative and Associative.	• Hatch in geometry, around text, dimension and attributes. • Editing hatch.
9. Working with blocks and block attributes.	• Concept of block. • Concept of block attributes	• Types of block. • Create Insert, and editing block. • Create and Insert WBLOCK. • Nested block. • Dynamic block. • Define, Insert,
10. Understanding external references and layout concept.	• Concept of x-ref. • Model vs. Layout. Plot/Print.	• Attach, Detach, Bind option. • Viewport concept. • Plot and its settings.
11. Design center and Tool palettes concepts	• Application of Design center in AutoCAD.	• Design center for insert Blocks. • • Create own Tool Palettes.

Evaluation:

There will be one exam that every trainee/student must pass with at least 75% or more to get a certificate of completion from BIMNCAD.