

Auto CAD

Skill Based Elective – I

(Semester – III)

Introduction to AutoCAD

Unit-I

Basic Principles and layout of Drawing sheets – Basics principle – Scales – Lines – Projection Methods – Types – Isometric projections –Uses – limitations – sections and other connections – dimensioning principles – applications.

Unit-II

System requirements – Installation or Up gradation of AutoCAD Software. Introduction and Overview of AutoCAD, Today window – Pointing Device – Buttons – Digitizing Tablets – Tool Bars – The Menu Bar –Shortcut Menus – The object snap menu –

Unit -III

Command entry or the command line – System variables – Navigation and Editing within the command window – Switching between Dialog boxes and command line – Dock and Realize

Unit-IV

Start from scratch – Use a setup wizard – Use a Template file – Save a drawing – Overview of Opening Drawings – Find a drawing file – Working with multiple drawing – Opening a part of a large drawing (Partial load) – Adding Identifying information to drawing

Unit-V

Recover a Damaged file - Setting of units of measurements – Angle Conversion – Scaling. Overview of AutoCAD standards – Defining standards – Checking the drawing for standard violation.

References

Ibrahim Zeid, CAD – CAM Theory and Practice, Tata Mcrow Hill Publication Co Ltd., New Delhi, 1991.
M.C.Mathor & R.S.Vaishwas, Engineering Drawing & Graphics, New Delhi, 1993
BHATT.N.D. and PANCHAL.V.M., “Machine Drawing”, Charotar Publishing House, 388001, 38th Edition, 2003.
P.S.G. Design Data Book Ellen Finkelstein, “AutoCAD 2004 Bible”, Wiley Publishing Inc, 2003.
Sham Tikoo, “ AutoCAD 2002 with Applications”, Tata McGraw-Hill Publishing Company, NewDelhi, 2002.
“CollabCAD Software”, National Informatics Centre (CAD Group), Govt. of India, A-Block, C.G.O. Complex, Lodhi Road, New Delhi 110003, 2003” www.collabcad.com

Skill Based Elective – II

(Semester – IV)

Introduction to 2D Drawing

Unit-I

Drawing of linear objects – line, polyline, polygons, multiple lines, objects, free hand sketches. Drawing of curved objects – Arc, circles, polyline arcs, donuts, ellipses, splines - Drawing of construction and reference geometry-Reference point-Construction of lines and rays.

Unit-II

Editing and Existing objects Selecting of objects-Individual selection-Multiple object selection-De selection –Filter selection –Customize objects selection –Grouping of objects.

Unit -III

Modify the objects –Erase, move, rotate, copy, offset, mirror, fillet, chamfer, break, trim-Changing the size and shape of the objects-Using grips to edit the objects-Modifying splines.

Unit -IV

Modify compound objects –explode, hatch edit and medication of solid filled areas-Join polyline and modification of Multilines.

Unit-V

Changing view in 2D Panning, zoom, pan and zoom-Aerial view window-Save and Restore views-Layering-Line types-Hatch-Plot-M space-P space.

References

Radhakrishanan.P., and Kothandaraman.C.,Computer Graphics and Design, Dhanpat Ravi and Sons, New Delhi, 1991.

Sevensen, Hi nick, Mechanical Drawing, CAD Communication French, Mc Graw Hill International publication, New Delhi, 1994

Skill Based Elective – III

(Semester – V)

Mini Project

Skill Based Elective – IV

(Semester – V)

Advanced Techniques in 2D Diagram

Unit-I

Dimensioning - Basic concepts of dimensioning –Overview of dimensioning-Parts of dimensioning – Associate dimensioning.

Unit II

Dimension style-Scale for dimension Linear, angular, radial, ordinate dimensioning-Modifying existing dimension, Geometric tolerance.

Unit-III

Scripting- M slide, V slide, resume, R script, Block-Block, V block-Insert Creation and combining areas – Regions and Boundary.

Unit-IV

Isometric view – Snap style setting – Isoplane and Isocircle. Overview of Raster images – Attach, scale and Detach raster images.

Unit -V

Modify raster image boundaries – Manage raster images – True raster image – Performance

References

- Ibrahim Zeid, CAD – CAM Theory and Practice, Tata Mcrow Hill Publication Co Ltd., New Delhi, 1991.
Radhakrishanan.P., and Kothandaraman.C., Computer Graphics and Design, Dhanpat Ravi and Sons, New Delhi, 1991.
William .M. Neumann and Robert .F. Sproul " Principle of Computer Graphics ", McGraw Hill Book Co. Singapore ,1989.
Donald Hearn and .M. Pauline Baker " Computer Graphics " Prentice Hall ,Inc., 1992.
Mikell .P. Grooves and Emory .W. Zimmers Jr. " CAD/CAM Computer -- Aided Design and Manufacturing" Prentice Hall ,Inc., 1995.

Skill Based Elective – V

(Semester – VI)

3D Modeling

Unit-I

Overview of 3D objects – Extruded thickness to object –V Point –

Unit- II

Wire frame model – Surface model – 3D Solids – Box, Cone, Cylinder, Sphere, Torus, Wedge, Revolve.

Unit-III

Editing of 3D Commands – Union, Subtract, Slice, Align, Mirror 3D

Unit- IV

3D Array - V Ports – So draw – sol view.

Unit-V

Rendering, R mat – Light – Landscape Objects.

References

Ibrahim Zeid, CAD – CAM Theory and Practice, Tata Mcrow Hill Publication Co Ltd., New Delhi, 1991.

Radhakrishnan.P., and Kothandaraman.C., Computer Graphics and Design, Dhanpat Ravi and Sons, New Delhi, 1991.

Sevensen, Hi nick, Mechanical Drawing, CAD Communication French, Mc Graw Hill International publication, New Delhi, 1994

Skill Based Elective – VI

(Semester – VI)

Project Work-Practical