NAMAL UNIVERSITY MIANWALI

DEPARTMENT OF ELECTRICAL ENGINEERING

ENGINEERING DRAWING

LAB # 023

REPORT

Title : Introduction to AutoCAD

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Marks	

Introduction :

AutoCAD Electrical is a specialized software program developed by Autodesk, a leading provider of computer-aided design (CAD) software solutions. It is designed specifically for electrical engineers and professionals involved in the design, drafting, and documentation of electrical control systems, such as industrial machinery, power distribution networks, and building automation systems. AutoCAD Electrical is a powerful tool that enables users to create and edit electrical schematics, panel layouts, and control circuit diagrams, as well as generate bills of materials and wire lists. It also includes a comprehensive library of electrical symbols and components, as well as features like automatic numbering, tagging, and cross-referencing, which can significantly improve productivity and accuracy in electrical design projects. With its intuitive interface and advanced functionality, AutoCAD Electrical is a valuable tool for anyone involved in the electrical engineering field.

Concise Summary of AutoCAD :

AutoCAD is a powerful computer-aided design (CAD) software program developed by Autodesk that allows users to create, edit, and view 2D and 3D designs and models. It is widely used in a variety of industries, including architecture, engineering, construction, and manufacturing. AutoCAD offers a range of tools and features that can help users to improve productivity and accuracy, such as drawing and editing tools, layer management, and annotation tools. It also supports collaboration and file sharing through cloud-based services, making it easier for teams to work together on design projects. Overall, AutoCAD is a versatile and comprehensive software program that can help users to create professional-level designs and models for a wide range of applications.

Drawing Commands :

AutoCAD Command	Description	Shortcut
LINE	Draws a straight line segment from one point to another	L

AutoCAD Command	Description	Shortcut
CIRCLE	Draws a circle with a specified center point and radius	C
ARC	Draws an arc based on specified start, center, and end points	A
RECTANGLE	Draws a rectangle using two points as diagonally opposite corners	REC
POLYGON	Draws a closed polygon with a specified number of sides	POL
ELLIPSE	Draws an ellipse or an elliptical arc	EL
SPLINE	Draws a smooth curve through specified points	SPL
HATCH	Fills an enclosed area or selected objects with a hatch pattern	H
MTEXT	Creates a single-line or multiline text object	MT
DIMLINEAR	Creates a linear dimension line	DI
DIMRADIUS	Creates a radius dimension	DR
DIMANGULAR	Creates an angular dimension	DA

AutoCAD Command	Description	Shortcut
LAYER	Controls properties of layers within a drawing	LA
BLOCK	Creates a block, which is a group of objects that can be used repeatedly in a drawing	B
INSERT	Inserts a block or drawing file into the current drawing	I
ERASE	Removes selected objects from a drawing	E
COPY	Copies selected objects to a new location	CO
MOVE	Moves selected objects to a new location	M
ROTATE	Rotates selected objects around a specified base point	RO
SCALE	Changes the size of selected objects uniformly or non-uniformly	SC
ARRAY	Creates multiple copies of selected objects in a rectangular or polar pattern	AR
TRIM	Removes parts of selected objects that extend beyond a specified cutting edge	TR

AutoCAD Command	Description	Shortcut
EXTEND	Extends selected objects to a specified boundary	EX

Conclusion :

AutoCAD is a popular CAD software with a long history and numerous features. We have created a table of its drawing commands, including descriptions and shortcuts. While this lab offers a brief introduction, mastering AutoCAD requires practice and exploration.