
Contents

Preface	v
Chapter 1 Working Effectively with AutoCAD	1-1
1.1 Creating a Custom Workspace	1-3
1.2 Using the Keyboard Effectively	1-12
1.3 Object Creation, Selection & Visibility	1-16
1.4 Working in Multiple Drawings	1-25
1.5 Copying & Pasting Between Drawings	1-29
1.6 Using Grips Effectively	1-33
1.7 Additional Layer Tools	1-38
Chapter 2 Accurate Positioning	2-1
2.1 Coordinate Entry	2-3
2.2 Locating Points with Tracking	2-9
2.3 Construction Lines	2-13
2.4 Placing Reference Points	2-16
Chapter 3 Projects – Productivity Tools	3-1
3.1 Schematic Project – Purifier Unit	3-3
3.2 Mechanical Project – 2 Views	3-5
3.3 Architectural/Civil Project – Formal Garden	3-6
3.4 Mechanical Project – Cover Plate	3-7
3.5 Architectural Project – Addition	3-8
3.6 Mechanical Project – Block	3-9
3.7 Mechanical Project – Plate	3-10
Chapter 4 Parametric Drawing	4-1
4.1 Working with Constraints	4-3
4.2 Geometric Constraints	4-4
4.3 Dimensional Constraints	4-12
Chapter 5 Working With Blocks	5-1
5.1 Creating Blocks	5-3
5.2 Editing Blocks	5-9
5.3 Removing Unused Elements	5-16
5.4 Adding Blocks to Tool Palettes	5-19
5.5 Modifying Tool Properties in Tool Palettes	5-22

Chapter 6	Projects – Creating and Organising Blocks	6-1
6-1	Mechanical Project – Control Panel	6-3
6-2	Architectural Project – Furniture Layout	6-4
6-3	Civil Project – Utility Layout	6-5
Chapter 7	Creating Templates	7-1
7-1	Why Use Templates	7-3
7-2	Controlling Units Display	7-6
7-3	Creating New Layers	7-16
7-4	Adding Standard Layouts to Templates	7-24
Chapter 8	Annotation Styles	8-1
8-1	Creating Text Styles	8-3
8-2	Creating Dimension Styles	8-7
8-3	Creating Multileader Styles	8-21
Chapter 9	Projects – Drawing Setup and Utilities	9-1
9-1	Interiors Projects	9-3
9-2	Mechanical/Schematic Project	9-4
9-3	Civil/Map Project	9-5
9-4	Mechanical Project – Dimension Styles	9-6
Chapter 10	Advanced Layouts	10-1
10-1	Quick View Layouts	10-3
10-2	Creating and using Named Views	10-5
10-3	Other Viewport Types	10-8
10-4	Layer Overrides in Viewports	10-15
10-5	Additional Annotative Scale Features	10-23
Chapter 11	External References	11-1
11-1	Attaching External References	11-3
11-2	Modifying External References	11-10
11-3	Xref Specific Information	11-20
Chapter 12	Optional Topics	12-1
12-1	Creating Industry Specific Workspaces	12-3
12-2	Using QuickCalc	12-7
12-3	Additional Zoom Commands	12-9
12-4	Advanced Object Selection	12-10
12-5	Additional Text Tools	12-12
12-6	Additional Dimensioning Tools	12-16
12-7	Creating Boundaries and Regions	12-19
12-8	Modifying Length	12-24

Chapter 13 Large Projects: Drawing	13-1
13-1 A2 Size Drawing Border	13-3
13-2 Mechanical Project – Drill Press Base	13-5
13-3 Architectural Project – Office Tower	13-10
13-4 P&ID Project – Oil Lubrication System	13-16
13-5 Civil Project – Warehouse Site	13-19
Skills Assessment	14-1
AutoCAD 2011 – Level 1 – Stage 2 – Intermediate Skills Assessment	14-3
Index	15-1
Index	15-3
Appendices	
Appendix A - Answers To Self Check Questions	A-1
Appendix B – Practice & Project Exercise List	B-1
Appendix C – AutoCAD System Requirements	C-1
Appendix D – Notes about the Enclosed CD & Exercises	D-1
Appendix E – Template Check List	E-1

Preface

This training manual refers to both AutoCAD and AutoCAD LT. All topics including features and commands relate to both AutoCAD and AutoCAD LT unless specifically noted otherwise.

The objective of *AutoCAD 2011 Level 1* is to enable students to create a basic 2D drawing in AutoCAD. Even at this fundamental level, AutoCAD is one of the most sophisticated computer applications that users are likely to encounter. Learning to use it is therefore not a trivial undertaking. To make the process easier and provide flexibility for instructors and students, the class is divided into two parts that may be taken independently.

Level 1 - Stage 1 Fundamentals (three days) covers the indispensable core topics for working with AutoCAD. The teaching strategy is to start with a few basic tools that will let the student create and edit a simple drawing. We then continue to develop those tools, as well as introducing more advanced tools throughout the course. Not every command or option is covered, because the intent is to show the most *essential* tools and concepts, these are:

- understanding the AutoCAD workspace and user interface
- using basic drawing, editing, and viewing tools
- organizing drawing objects on layers
- inserting reusable symbols (blocks)
- preparing a layout to be plotted
- adding text, hatching, and dimensions

Level 1 - Stage 2 Intermediate (two days) continues with more sophisticated techniques that will extend the user's mastery of the program. For example, here we go beyond the basic skill of *inserting* a block to learn how to *create* blocks, and beyond the basic skill of *using* a template to understand the process of *setting up* a template. You learn skills such as:

- Using more advanced editing and construction techniques.
- Add parametric constraints to a drawing.
- creating local and global blocks
- Setting up layers, styles, and templates.
- Using advanced plotting and publishing options.
- Adding, and controlling the use of, external references in drawings.

Note on Practices and Project Exercises

The practices related to each topic are designed to give brief hands-on experience with a particular skill. Unless otherwise noted, the practices can be completed in under five minutes.

The Project Exercises at the end of each module offer additional, extended practice to reinforce the skills in that module. These exercises are optional, and may be used at the discretion of the instructor. The estimated time for completion is provided with each Project Exercise.

Further information about the exercises can be found in Appendix D.