



Training Profile

MicroStation XM 2D Basics

Course Aims

This course is aimed at both beginners and MicroStation users with some exposure to CAD concepts. On completion of the course, the student should have a thorough understanding of the essential aspects of MicroStation 2D. Though the course follows the topics indicated in the course outline, time will be made to cover aspects and concepts that are pertinent to course participants, using (where appropriate) the students own drawings/layouts etc. If this is required, then discussions will be held before the start of the course, between the students and the course tutor, to detail those areas. A certificate will be issued upon successful completion.

Pre-requisites

IT literacy and an understanding of basic draughting techniques/geometry.

Course Contents

Startup and Interface Screen

- Opening a New Design File
- The Interface Screen
- Using Settings Boxes and Dialog Boxes
- Working with MicroStation's Model system
- Identify Methods of Saving Design Files.

Circles, and View Controls

- Reopening the Design File
- Using the Mouse
- Opening Tool Boxes and Selecting Tools
- Floating and Docking Tool Boxes
- Using the View Control Tools
- Help Options
- Escape key usage
- Other Key/Button combinations

Selecting and Deleting Elements

- Selecting Single Elements - Element Selection Tool
- Multi-Element Selection Sets - Element Selection Tool
- Multi-Element Selection Sets - Power Selector
- Deleting Elements
- Undoing and Redoing Actions

Snaps and Tentative Points

- Setting the Keypoint Snap Mode
- Identify Snap Options in the Locks Settings Box
- Using AccuSnap to place Tentative Points and Snaps
- Element Keypoints Locations and Divisor Setting
- Identify All Snap Modes
- Manual Tentative Point Placement
- Practicing the Snap Override
- "Cycling" Through Snap Points
- Tentative Points as Coordinates
- Use Shift- Tentative Point for Snap Modes
- AccuSnap Setting Options

Design Plane, Working Units, and Inputs

- The Design Plane
- Working Units
- Entering Precise Dimensions

AccuDraw

- Activating AccuDraw
- AccuDraw.s Rectangular and Polar Compasses
- Drawing Plane Coordinates
- Keyboard Shortcuts
- Circles and AccuDraw
- Recalling Previous Values
- Constraining Data Points
- Relocating the Compass Origin with "O" for "Origin"
- Shortcut Snap Modes and Constraints
- Unit Roundoff
- Using the Popup Calculator
- The Complete List of AccuDraw Shortcut Keys

Absolute Coordinates and Grids

- Opening the Precision Key-In Box
- Absolute (XY=) Key-In
- Delta and Distance Key-ins
- Using the Grid

Polygons

- The Place Block Tool
- Place Shape
- Place Orthogonal Shape
- Place Regular Polygon

Arcs and Ellipses

- Arc Properties
- The Place Arc Tool
- Drawing Arcs - Center Method
- Drawing Arcs - Edge Method

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Ellipse Tools

- Full Ellipse
- Placing Half- and Quarter-Ellipses - Arcs Tool Box
- Isometric Ellipses
- Arc Editing Tools

SmartLine

- Setting SmartLine Options
- Drawing with SmartLine - Vertex Types
- SmartLine.s Options
- Drawing Line Strings - Vertex Types
- Drawing with SmartLine - Arcs
- SmartLine and Arcs

Element Symbology

- Adding Color to Elements
- Adding Line Style to Elements
- Adding Line Weight to Elements
- Levels
- Setting Construction Class Elements
- Setting Fill Color
- Apply Element Attributes Quickly
- Matching Element Attributes
- Modify Line Style Attributes and Change Fill Type
- Display Element Information

Advanced Selection Sets

- Building Fences
- Copying with a Fence
- Moving with Fences
- Copying with the Shape Mode
- Deleting fence contents
- Changing fence shapes
- Manipulating fence contents
- Saving fence boundaries
- Create element groups using the Group tools
- Select elements using element Attributes as criteria
- Select elements using the Select All option

Manipulate Tools

- Copy and Move Tools with Precision
- Move and Copy Through the Windows Clipboard
- Moving Quickly
- Using the Scale Tool
- Using the Rotate Tool
- Using the Mirror Tool
- Using the Construct Array Tool
- Using the Align Elements by Edge tool
- Using the Stretch tool
- Move Parallel
- Move To Contact tool
- Manipulate the contents of a Fence

Modify Tools

- Element Selection Tool
- Modify Element
- Delete Part of Element
- Extend Line
- Extend Two Lines to Intersection
- Extend Element to Intersection
- Trimming Elements
- Insert Vertex
- Delete Vertex
- Construct Circular Fillet
- Construct Chamfer

Inquiry Tools

- Element Information
- Measurement Tools

Exercises A collection of drawing exercises to help reinforce the previous instruction and to provide drawings for use in the next two Modules.

Annotation

- Setting Text Attributes
- Placing Text
- Text Display
- Plotting and Text Height
- Text Tools
- Create Text Styles
- Character Mapping

Dimensioning

- Dimensions and Text Settings
- Dimension Settings
- The Dimension Element Tool
- The Dimension Size with Arrow and Stroke Tools
- Dealing with Small Dimensions
- Changing Existing Dimension Settings
- Using the Modify Element Tool
- Associative and Non-Associative Dimensions
- Editing Dimension Text
- Angular Dimension Tools
- Radial Dimension Tools
- Place Notes Tool
- Place multiple dimensions
- Additional Dimension Tools

Plotting and Printing

- The Basic Process
- Preparing the Drawings
- Selecting Elements for Plotting
- Plot Setup - English Units
- Plot Setup - Metric Units
- Plot Output
- Additional Information - Plotter Driver Files
- Additional Information - Drawing Setup
- PDF file plotting support

Key-Ins

- The Key-in Dialog Box
- Finding Key-in Sequences
- Direct Key-in Entry

Advanced AccuDraw

- Adding Shortcuts
- Entering Command Lines
- Naming Shortcut Key-ins
- Editing Shortcuts
- AccuDraw and Orthographic Views
- AccuDraw Settings Menus

Advanced Dimensioning

- Working with Insert Vertex and Delete Vertex
- Dimension Associations
- Dimensions and Rotated Views
- Understand and Apply Level Styles
- Saving Dimension Styles
- Placing Geometric Tolerances
- Plotting drawings at multiple scales
- Scalable Place Notes
- Dimension Audit tool
- Annotation Scale

Advanced Annotation

- Placement Methods
- Create and save Text Styles
- Text Nodes

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Text Number Increment Tool
Data Field Tools
Importing Text Files
Spell Checking and Find and Replace text
Importing Fonts
Stretching Text
Annotation Tool Box Options
Font Character Maps
Annotation Scale

Reference Files and Models

New Design Files
Referencing the Title Block
Modifying the Reference File
Adding Text to the Title Information
Copying Attachments and Copying Elements
Additional Settings and Tools
Dimensioning Attached Files
Saved Views and Self-attachment
Reference Files and Preferences
Reference Files and Working Units
Reference File and Models Exercise
Annotation Scale
Paper Sheet Layouts

Cells

MicroStation.s Cell Libraries
Placing Cells
Placing Shared Cells
Using the Cell Selector
Other Cell Placement Tools
Creating Cells and Cell Libraries
Changing Cell Contents
Using the Replace Cells Tool
More Cell Information
Cell Exercise
Control Attachment of V7 Cell Libraries

Tags

Tag Organisation
Editing Tags
Creating Tag Set Libraries
Change Tags Tool
Generating Tag Data Reports

Complex Elements

Using SmartLine
Creating Complex Chains
Creating Complex Shapes
Creating Regions (Boolean Operations)
Practical Uses
Dropping Complex Elements

Patterning

Single-Line Hatches
Crosshatches
Patterning Methods
Patterning with Cells
Associative Patterns
Pattern Attributes
Deleting Patterns
Patterning Around Holes
Show Pattern and Match Pattern Attributes Tools
Linear Patten Tool
Change Pattern tool

Multi-Lines

Placing Multi-lines
Using Multi-lines

Editing Wall Junctions
Adding Windows and Doors
Other Multi-line Editing Tools
Saving Multi-line Definitions

Custom Line Styles

The Basic Process
First Step - Create the Buoy Symbol and Point Component
Second Step - Create the New Stroke Pattern
Third Step - Associate the Symbol with the Stroke Pattern
Fourth Step - Create the Compound Component
Manage Line Style Definition Dialog Box
Additional Information

Curves

Curve Tool Location
Place Point or Stream Curve Tool
B-Spline Curves
Composite Curves
Curve Calculator
Curve Editing Tools

Points

The Active Point
The Place Active Point Tool
The Construct Active Points Between Data Points Tool
The Project Active Point onto Element Tool
The Construct Active Point at Intersection Tool
The Construct Active Points along Element Tool
The Construct Active Points at Distance along Element Tool

Settings Groups (Manage)

Using MicroStation's Multi-line Settings Groups
Dimension Styles
The "Category" Options
The "Style" Options
Creating a New Line Component
Creating Other Components
Creating Multi-line and Dimension Components

Customization

Active Templates
Design Libraries
Custom Tool Boxes
Custom Task Lists
Standards Checker
User Interfaces

Miscellaneous Items

Auxiliary Coordinate System (Acs) vs Rotated Views
Open AutoCAD Files in MicroStation
Assigning Tools to Function Keys
Package Design Files and Open Archive Files
Apply Design History to Record Design Changes
Apply Data Cleanup
Named Groups, Display Sets, and Quicksets

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Course Length

Beginners - 3 days minimum

Experienced CAD users - 2 days minimum

If the course participants require more assistance/guidance for the working practices in their own environment, then another day could be added to both the beginners and experienced users course. This day would cover those aspects in detail and could involve setting up the environment/customisation of the users systems.

Lunch is provided when course is taken at The Design Centre.

Booking Details

Please call us on **01493 440444** to find out course availability and other training options.