AutoCAD Civil 3D Essentials

3 Day Course

Who Should Attend?

The course is designed for delegates who are new to working with AutoCAD Civil 3D. Delegates should have a working knowledge of AutoCAD. It is also recommended that delegates have a working knowledge of Microsoft Windows.

Objectives

This course is designed to teach the essential elements of AutoCAD Civil 3D to new users.

Agenda

Learn the essentials of AutoCAD Civil 3D in this three-day training course, intended to give users comprehensive experience with the features and benefits of AutoCAD Civil 3D. Hands-on exercises throughout the course to explore how to create Civil 3D models and associated outputs.

Note: We normally train on the latest version. During the course delegates will cover:

Agenda Topics:

1. **The Civil 3D Environment (basic introduction to the following)**
   - Civil 3D foundation products (AutoCAD 2D & 3D, MAP 3D, Civil 3D)
   - Application Menu
   - Templates (including UKIE Template)
   - Workspace
   - Ribbon Menus
   - Toolspace (Prospector, Settings, Survey, Toolbox)
   - Change Style
   - Quick Profile
   - Drawing Area
   - Command Line
   - Panorama

2. **Create and Analyse a Surface**
   - Import a PENZ.csv file
   - Object Viewer
   - Quick Profile
   - Surface analysis (spot levels, slopes, contours, water drop, catchments, colour banding)
   - Change Style

3. **Surface Editing and Filtering**
   - Move, Edit point
   - Delete/Add Lines
   - Swap Edge
   - Add Breaklines
   - Create Surface Boundaries
   - Surface Definitions (exclude greater than, less than, by internal TIN angle etc.)

4. **Create and Edit Feature Lines**
   - Create Features Lines from Objects
   - Editing Feature Lines (Level Editor, Add Level Points, Quick Level Edit)

5. **Create Grading**
   - Grading Groups
   - Sites
   - Grading Toolbar
   - Grading Surfaces
   - Paste Surfaces
   - Grading Volumes tools
   - Grading Transitions and Infill

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Day 1 (Continued):

6. Create Realistic Views

- Drape Image
- GEOMAP
- Using Civil Multiview Block

7. Import Existing Ground Data

- Import Survey Data using Linework Code Set
- Create Point Styles and Point Label Styles
- Create and Apply a Description Key Sets
- Create and Apply a Figure Prefix Database
- Create and Apply Point Groups
- Edit Survey Points and Figures
- Import Point Files
- Create Points manually
- Create Point Styles
- Create Surface from drawing objects

Day 2 – Review Learning Objectives from Day 1:

1. Horizontal Alignment Design

- Alignment from Objects
- Alignments Design - IP Method
- Use of Grip Edits
- Grid View
- Use of Transition Curves
- Edit Alignment Styles and Label Styles

2. Vertical Profile Design

- Create Surface Profile
- Vertical Profile Design – IP Method
- Edit the Profile View Parameters

3. Assembly Creation
- Create Assemblies from Subassemblies
- Editing Assemblies and Subassemblies

4. Corridor Creation

- Create a simple corridor
- Create a Corridor Surface
- Extract Corridor Features

5. Analyse the Corridor

- Cross Section Editor
- Drive tool
- Sight Distance

6. Corridor Surfaces and Volume Calculations

- Corridor Surfaces
- Corridor Boundaries
- Volumes Surfaces
- Using a Volume Surface for Cut/Fill analysis
- Volumes Dashboard

7. Superelevation Design

- Calculate Superelevation
- Using the Superelevation Tabular Editor
- Using the Superelevation View

8. Criteria Based Design

- Horizontal and Vertical Design Checks
Horizontal and Vertical Design Criteria Files

Day 3 – Review Learning Objectives from Day 2:

1. Offset Alignments

- Create Offset Alignments
- Create Tapers and Widening

2. Advanced Corridor Creation

- Corridor Targeting
- Corridor Regions
- Corridor Frequencies
3. Create Cross Sections

- Create Sample Lines
- Create Cross Section Sets
- Annotate Sections

4. Gravity Pipe Networks

- Pipe Networks from Objects
- Pipe Networks from Toolbar
- Place Structures and Pipes
- Edit Structures and Pipes
- Add Labels to Structures and Pipes
- Create Network Tables
- Draw Network Parts in Profile
- Draw Network parts in Cross Section

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5. **Cross Sectional Volume Calculations**
   - Take Off Criteria
   - Materials lists
   - Compute Materials
   - Material Volume Report and Tables

6. **Quantity Take Off**
   - Import Rate Item Files
   - Import Categorisation Files
   - Create Take Off Item from Objects
   - Create Take Off from Enclosed Areas
   - Create Take Off items from corridors
   - Create Take Off Report

7. **Drawing Production**
   - Create View Frame Groups
   - Create Sheets for Plans/Profiles
   - Create Section Sheets

8. **Sharing Dynamic Data**
   - Data Shortcuts

9. **Assessment Exercise**
   - Short exercise (30 mins) based on lessons learnt over the 3 days training

The above may be varied to suit customer preferences and requirements.

Qualifications

On completion of the course, you will be presented with an Autodesk Authorised Training Certificate.

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