AutoCAD Civil 3D Essentials

Overview

The Autodesk® Civil 3D® Essentials learning guide is designed for Civil Engineers and Surveyors who want to take advantage of the Autodesk Civil 3D software's interactive, dynamic design functionality. The Autodesk Civil 3D software permits the rapid development of alternatives through its model-based design tools. You will learn techniques enabling you to organize project data, work with points, create and analyze surfaces, model road corridors, create parcel layouts, perform grading and volume calculation tasks, and layout pipe networks.

Duration

4 Days (08:30 – 16:00)

Pre-requisites

Before using this courseware, the student should have a working knowledge of the following:

- Proficient in using AutoCAD or have attended AutoCAD Essentials (Click for More)

Course Accreditations

This course is validated at the following Quality Councils for CPD Credits:

Course Outline

UI Tour

- Basic setup of the environment
- The ribbon and user interface terminology
- Tabs, panels, and tools
- Using the toolspace, panorama and the properties palettes
- Navigate the model, different file formats and their uses

Introduction to Styles

- Introduction to styles
- Object and point styles - Label and surface styles
- Dynamic relationships and BIM

Point Files and Point Groups

- Working with point files (survey and COGO points)
- Point settings and creating points
- Managing point groups
- Point reports and point label styles
- Description keys
- Importing survey data

Surface Creation, Modification, and Manipulation

- Surface components and the surface creation process
- Surface types and surface rebuilding
- Adding Points to a surface and editing surface definitions
- Annotating surfaces, surface analysis and visual checks

Land Development with Parcels

- Working with and creating parcels
- Converting basic AutoCAD objects
- Editing and annotating parcels, and parcel tables

Modelling New Terrain

- Creating feature lines and their design criteria - Grading criteria, groups, sites, and constraints
- Grading surfaces and combining design surfaces
- Earthwork volume calculations

Geometric Design - Horizontal Design

- Horizontal alignments
- Alignment creation and design criteria
- Editing alignments
- Design speeds and annotating alignments

Geometric Design - Vertical Design

- Surface profile layout and profile views
- Design profile layout and editing profiles
- Design criteria and annotating profiles
- Display design information in data bands

Geometric Design - Corridor Design

- Assemblies and subassemblies

- Baselines, regions, and targets
- Corridor surfaces, offset parameters and lane widening
- Design validation with drive analysis
- Intersections

Quantity Calculations and Cross Sections

- The section editor
- Frequency, and sample lines
- Single and multiple section views
- Quantity take-off criteria
- Cut and fill factors
- Cross section data
- Volume tables

Gravity Pipe Network Modelling and Analysis

- Gravity pipe networks
- Part catalogues and parts list
- Pipe network considerations
- Creating and editing a gravity pipe network
- Surface runoff conditions
- Catchment areas
- Alignments and profile tools
- Analyse and annotating pipe networks

Pressure Network Modelling

- Network components
- Catalogues and parts list
- Creating and editing pressure pipe networks
- Performing design checks

Production Drafting and Drawing Layouts

- Plan production using tools
- Creating view frames
- Plan production object edits
- Creating drawing sheets
- Sheet sets and their properties