PCSS® The Project Management Specialist 4D The Advanced Digital Construction

# Autodesk Civil 3D 2022 Training

DURATION: 3 DAYS

Be it for mega-infrastructure projects, GIS integration or applying it just for plain 2D drafting purposes, Autodesk Civil 3D is the flexible Building Information Modeling (BIM) tool for civil and infrastructure projects. In this 3-day training session, we will learn the designing of simple access roads and highways as well as land development projects in 3D BIM environments.

Starting with clean-up the survey data, we shall proceed to generate a 3D digital terrain model of the existing ground surface. Comprehensive analysis tools are available among others; water catchment area, elevation and slope analysis based on local standard. Explore the quick alignment generation tool together with proposed profile layout. Superelevation and alignment geometric design based on local standards are also included. Generating cross-section details and earthwork volume calculation and balancing of cut/fill are crucial in any road and highway project. Finally, the integration of Google Earth and BING map imagery will drive advantages to your organization to win more projects.

As for the Land Development module, a model is not completed without the proposed platform levels being modeled into the 3D surface. Participants will be exposed to properly model retaining walls, natural slopes, as well as earthwork cut/fill volume calculation using 3 methods namely TIN Volume Method, Average End-Area Method and Matrix Grid-Based Method. Learn how to quickly balance the earthwork volume to the optimum design and produce compelling cross-section detailing and hatching of cut/fill zones.

## TRAINING PROGRAMME

**DAY 1**

**Introduction to Autodesk Civil 3D**
- interface and Commands, Generating Template & Template Installation Guide

**Clean-up the survey Drawings**
- Working with Layers
- Execute clean-up Commands
- Importing Cleaned Survey Data into myCivil Plus Template

**Surface Analysis in 3D**
- Contour Labelling, Spot Elevations, Elevation Analysis & Slope Arrow Analysis

**DAY 2**

**Road and Highway - Alignment Design**
- Creating & Editing Horizontal Alignment
- Alignment Labelling: Control Plan
- Alignment Labelling: Fixed Interval Pegging Points with Coordinates

**Road and Highway - Superelevation Design**
- Generating Automatic Superelevation

**Road and Highway - Profile Design**
- Creating Existing Ground Profile
- Creating & Editing Proposed Road Profile

**Road and Highway - Assembly Design**
- Creating Typical Proposed Cross-section Of a simple Road

**Road and Highway - Corridor Design**
- Creating Proposed Corridor

**Road and Highway - Sample Lines**
- Creating Sample Lines

**Road and Highway - Volume Calculation**
- Earthwork Volume - TIN Volume Method, Cross - Section/Average End-Area and Matrix Grid-Based Method
- Earthwork Balancing

**DAY 3**

**Residential Development - Platform Design**
- Converting AutoCAD polylines into Civil 3D Feature Lines

**Residential Development - Grading/Slope Design**
- Creating Natural/Earth Slopes with benching
- Creating Retaining Walls

Residential Development - Proposed Surface
- Generating Proposed Platform Surface]

Residential Development - Earthwork Cut & Fill Volume Calculation
- Earthwork Volume - TIN Volume Method, Cross-Section/Average End-Area and Matrix Grid-Based Method
- Earthwork Balancing

Residential Development - Preparing Construction Drawing\
- Hatching Cut-Fill Areas/Zones
- Auto-Generate the Cross-Section Detailing

Importing Google Earth and BING Map Imagery
- Setting up the Coordinate System
- Converting 2D Satellite image to 3D Satellite image using Draping Command

BIM Workflow Overview
- Integration with Autodesk InfraWorks
- Integration with Autodesk Vehicle Tracking
- Integration with Autodesk NavisWorks
- Integration with Autodesk Revit
- Integration with Autodesk 3ds Max

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