

CIVIL 3D INTERMEDIATE/ADVANCED

COURSE OUTLINE



Class Description

Class Description

The U.S.CAD Civil 3D Intermediate/Advanced class is designed for Civil Engineers and Surveyors who are experienced Civil 3D users looking to build upon existing Civil 3D skills and take advantage of underused software 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.

Prerequisites

Working knowledge of Civil 3D, including creating alignments and profiles, and a sound understanding and knowledge of civil engineering terminology.

Class length: 3 Days

Advanced Grading/Surfaces

- Surface tools
- Additional Surface Creation Methods
- Refining and Editing Surfaces
- Analyzing surfaces
- Using Visibility Checker
- Comparing surfaces
- Importing a point clouds
- Working with point clouds
- Creating surfaces from point clouds
- Working with grading feature lines
- Accessing grading feature line tools
- Editing feature line information
- Grading objects
- Using gradings for interim surfaces

Quantity Takeoff

- Employing pay item files
- Pay item favorites
- Searching for pay items
- Keeping tabs on the model
- AutoCAD objects as pay items
- Pricing your corridor
- Pipes and structures as pay items
- Highlighting pay items
- Inventorying your pay items

Advanced Corridors, Intersections, and Roundabouts

- Create a corridor from a feature line
- Using multiregional baselines
- Modeling cul-de-sacs
- Establishing EOP design profiles
- Trouble shooting cul-de-sacs
- Using Intersection Wizard
- Creating intersections manually
- Troubleshooting intersections
- Creating assembly offsets
- Using corridor utilities
- Using feature lines for width and elevation controls

- Working with roundabouts
- Working with drainage design
- Creating roundabout alignments
- Center design
- Working with superelevations
- Critical stations
- Design criteria files
- Creating alignments
- Superassemblies
- Applying Superelevations to the design
- Transition station overlap
- Calculating for cants for rail
- Preparing cants
- Creating rail assembly
- Applying cant to the alignment
- Superelevation and cant views
- Using a superelevation view to edit data
- Cross section and mass haul
- Section workflows
- Comparing sample lines and frequency lines
- Creating Sample Lines
- Editing Swath Width of Sample Line Group
- Creating Section Views
- Creating a Single-Section View
- Creating Multiple Section Views
- Section View and Annotation Scale
- Calculating and reporting Volumes
- Computing Materials
- Creating Volume Table in the Drawing
- Adding Soil Factors to Materials List
- Generating a Volume Report
- Adding Section View Final Touches
- Adding Data with Sample More Sources
- Adding Cross-section Labels
- Using Mass Haul Diagrams
- Taking a closer look at the Mass Haul Diagram
- Editing a Mass Haul Diagram

- Setting up corridors to hatch plan sheets automatically
- Understanding locking regions
- Avoiding lengthy rebuilds
- Overhang correction for confused Datum surfaces
- Common surface creation issues
- Trouble with bowties
- Understanding corridor utilities
- Conditional assemblies
- Working with corridor “Branching” feature lines
- Dealing with the Waterfall Effect
- Dealing with missing daylighting areas

Advanced Pipe

- Catalogs management
- Understanding Parts List
- Using Parts Rules
- Create/layout a pipe network
- Editing a Pipe Network
- Creating Alignments from a network
- Generating/Editing Profiles
- Interference Checking
- Labels for pipes and structures
- Setting up Pressure Pipe Network
- Pressure Pipe Part List Creations
- Creating a Pressure Network
- Using Design Checks
- Creating/editing Profiles
- Understanding Part Builder
- Exploring Part Families
- Adding a size Using Part Builder
- Sharing Custom Parts
- Part Creation for Gravity network with Project Kameleon
- Part Creation for Pressure Networks using AutoCAD 3D model