

AutoCAD Civil 3D 2009 Essentials

Courseware Description

This foundation-level courseware covers the essentials of AutoCAD® Civil 3D® 2009. This three-day training course is intended to give students comprehensive experience with the features and benefits of AutoCAD Civil 3D. Hands-on exercises throughout the courseware explore how to create 2D and 3D drawings.

Objectives

The primary objective of this courseware is to familiarize students with the concepts and application of the essential functions of AutoCAD Civil 3D.

After completing this course, students will be able to:

- Work within the Civil 3D environment.
- Import and work with survey data.
- Create, edit, and manage points.
- Create, edit, and analyze surfaces.
- Create parcels and parcel tables.
- Create and edit horizontal alignments for sites.
- Create and edit profiles for sites.
- Create and work with assemblies and corridors for sites.
- Create a grading solution and grading quantities for sites.
- Create and edit pipe networks for sites.
- Create and edit transportation alignments and profiles.
- Create and edit transportation assemblies and corridors.
- Create and edit transportation cross sections and quantities.
- Create and manage plan sets.
- Manage Civil 3D data.

Who Should Attend

This courseware is designed to teach students the essential elements of AutoCAD Civil 3D for creating, analyzing, and managing civil engineering drawings and projects.

Prerequisites

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

- Microsoft Windows NT 4.0, Microsoft Windows 2000, or Microsoft Windows XP.
- How to navigate the Internet.

Course Outline

Day 1

AutoCAD Civil 3D Environment

- The Prospector Tab
- The Settings Tab
- Object and Label Styles
- Modify Drawing Settings, Viewport Scaling, and Text Size
- Use Command Settings to Set Default Styles, Naming Templates, and Parameters
- Export and View Land XML Reports

Survey

- The Prospector Tab
- The Settings Tab
- Object and Label Styles
- Modify Drawing Settings, Viewport Scaling, and Text Size
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Points

- Import and Create Points
- Manage Points
- Use Grips to Control Graphical Point Display
- Create a Point Table

Surfaces

- Create a Surface
- Modify the Surface Properties
- Edit a Surface
- Assign a Contour Style and Apply Surface Labels

Site Design: Parcel Creation

- Create a Right-of-Way
- Create Parcels Using Layout Tools
- Create Parcels from Objects
- Edit and Renumber Parcels
- Label Parcels and Create Table

Day 2

Site Design: Horizontal Alignments

- Create an Alignment with Polylines and Land XML
- Edit Alignments
- Label Alignments and Create Tables

Site Design: Existing and Design Profiles

- Create a Profile Using an Existing Terrain Surface
- Create a Design Profile Using Layout Tools
- Edit Profile Geometry
- Use Labels and Label Styles for Profiles and Profile Views

Site Design: Assemblies and Corridors

- Create Tool Palette with Subassemblies
- Create Assemblies for Cedar Cove Corridor
- Create a Corridor Model
- Create a Corridor Surface
- Extract Grading Feature Lines from Corridor

Site Design: Grading and Quantities

- Create and Edit Feature Lines
- Create Interim Grading Surface
- Create Feature Lines from the Surface and Update Surface
- Create Final Grading Surface and Calculate Volumes
- Create Spot Elevation and Grade Labels

Site Design: Pipes

- Work with Pipe and Structure Rules
- Layout Pipe Network
- Draw Pipes in Profile View and Edit Pipe Network
- Label Pipes in Plan and Profile

Day 3

Transportation: Alignments and Profiles

- Create a Horizontal Alignment Using the Alignment Layout Tools
- Use Station Reference Points, Design Speeds, and Superelevations
- Create, Edit, and Annotate Layout Profiles

Transportation: Assemblies and Corridors

- Create an Assembly and Modify Assembly Properties
- Create a Corridor (Corridor Parameters-RG)
- Modify the Corridor Properties and Create Corridor Surface
- Prepare 3D Model of Finished Road Design

Transportation: Cross Sections and Quantities

- Create Cross-Section Sample Lines
- Create Cross-Section Views
- Calculate Earthworks and Pavement Structure Quantities
- Create Quantity Reports
- Modify the Sample Line Group Properties
- Create Construction Staking Data

Transportation: Plan Production

- Create View Frames in a View Frame Group
- Create All Sheets in Individual Drawings
- Use AutoCAD Sheet Set Manager

Data Management

- AutoCAD External References
- Civil 3D Data Shortcuts and Reference Objects
- Vault

Note: The suggested course duration is a guideline. Course topics and duration may be modified by the instructor based upon the knowledge and skill level of the course participants.

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