CivilTraining, LLC
a DAVEY company

Autodesk Civil 3D Survey Essentials – 8.0 Hours (1 Day)

Course Description

Summary

This course provides an intensive introduction to the survey functionality provided within Autodesk Civil 3D®. The course builds on the Civil 3D Point management and display concepts from Civil 3D Essentials and examines how Civil 3D Survey manages data obtained in the field. Participants receive an in-depth examination of the Civil 3D Survey project and its database and how the survey portion of Civil 3D brings data security and multi-drawing point access to Civil 3D.

Topics addressed in this class are appropriate for surveyors engaged in most survey applications, such as topographic, mapping, ALTA, boundary, stakeout and engineering support. Civil 3D has powerful tools applicable across a wide range of survey applications, and this course brings real project application experience to the training and effective use of Civil 3D for surveyors.

Note: This course explores the survey functionality within Autodesk Civil 3D, and as a prerequisite, requires working knowledge of many core aspects of Civil 3D

Topics and Schedule

Civil 3D Survey Overview

- Civil 3D Survey Concepts
- The Civil 3D Survey Database
- Controlling Display of the Survey Interface
- Civil 3D Survey Projects, Data Security and Integrity

Review of Pertinent Civil 3D Point Concepts

- Point Object Concepts – Object and Label Styles
- Point Display Control Hierarchy in Civil 3D
- Point Display Flexibility in Civil 3D versus Land Desktop
- Importance of Civil 3D Unit Settings – Fieldbook/Drawing/Project

How Civil 3D Operates with Survey

- Survey Points Contrasted with Civil 3D Points
- Civil 3D Description Keys, Styles, Layers and Display
- Symbol Scaling with Description keys
- Point Style Availability and Description Keys

CivilTraining, LLC
a DAVEY company

Autodesk Civil 3D Survey Essentials – 8.0 Hours (1 Day)

Creating the Civil 3D Survey Project and Database

- Organizing the Survey Project within Job Folders
- Setting the Survey Working Folder
- Survey Working Folder Management from Project to Project
- Creating the Survey Database
- Survey Database Settings and Significance
- Control Points versus Non-control Points in Civil 3D Survey
- Point Availability in the Survey Database versus Display in Drawing
- Survey Network Concepts and Initial Display Style
- Data Organized and Displayed on the Survey Tab
- Import and Export of Survey Settings and Storage Locations

Creating Data in Civil 3D Survey

- Importing Survey Data – Import Types, Import Wizard and Import Events
- Capabilities of Import Strategies – Observation versus Coordinate Imports
- Survey Data Collection Link and Other Survey Interfaces in Civil 3D
- Setting Import Error Tolerances and Significance of Their Values
- Import Settings and Options in the Import Wizard
- Import Point Protection Strategy in Civil 3D Contrasted with Land Desktop
- Coordinate Entry, Control Points and Points Held
- Renumbering and Managing Point Numbers on Import
- Point Group Considerations on Import
- Overview of Linework Strategies in Civil 3D
- Managing Fieldbooks and Import Files
- Import Events, Their Management and Use

Interacting with Civil 3D Survey Data

- Civil 3D Survey "Points" Commands and Interface with the Drawing
- Designation of Survey Points in the Civil 3D Drawing and Prospector
- Viewing and Analyzing the Survey Network through Network Styles
- Setups and Observations as Displayed in Civil 3D Survey
- Using the Civil 3D Survey Preview
- Listing Survey Point Data by Setup and Other Lists
- Inversing between Survey Points in the Survey Command Window

Editing Data in Civil 3D Survey

- Editing Capabilities and Limitations within the Survey Interface
- Editing Setups versus Editing Points
- Translating and Rotating Survey Data
- When to Disconnect from the Database for Editing and Its Ramifications

5300 Wellington Branch Drive • Suite 100 • Gainesville, VA 20155 • Phone 732.869.0592 • Fax 732.377.5454
john.cooke@civiltraining.com • www.civiltraining.com
A division of Wetland Studies and Solutions, Inc.
a DAVEY company

CivilTraining, LLC
a DAVEY company

Autodesk Civil 3D Survey Essentials – 8.0 Hours (1 Day)

Traverse and Network Analysis in Civil 3D Survey

- Defining Traverses in Civil 3D
- Traverse Loop Reporting and Closure Options
- Network versus Loop-Based Analysis
- Least Squares Settings and Least Squares Analysis

Survey Utilities

- Using the Survey Database Change Log
- Using the Survey Log and Batch Files in the Survey Command Window
- Survey Command Language
- Manually Entering Survey Data
- Network Settings, Update and Auto-Update
- Exporting Fieldbooks
- Uploading Point Data

Survey Figure Capabilities and Management

- Survey Figures – Overview and Applications
- Creating Figures from Civil 3D and SmartDraft®
- Figure Interaction with Parcels, Feature Lines and Corridors

Prerequisites

Thorough familiarity with AutoCAD® is essential. Completion of Civil 3D Essentials is generally required. Participants who have not completed Civil 3D Essentials may attend, but complete familiarity with Civil 3D Point management and display concepts is absolutely required.

Learning Objectives

1. Participants will be able to create and organize a Civil 3D Survey project using the sample survey project data used in the course.
2. Participants will be able to import field generated survey data using the sample survey project data used in the course.
3. Participants will be able to edit survey data in the sample survey project used in the course.
4. Participants will be able to create traverse closure reports and perform traverse analysis using the sample survey project used in the course.

CivilTraining, LLC
a DAVEY company

Autodesk Civil 3D Survey Essentials – 8.0 Hours (1 Day)

AUTODESK CIVIL 3D SURVEY ESSENTIALS – ONE DAY	
Overall Course Length	8 Hours
Instructional Time	7 HOURS
PROFESSIONAL DEVELOPMENT HOURS (PDHS)	
New York State Land Surveyors	7.0 PDHs
New York State Professional Engineers	7.0 PDHs

This course is a registered Continuing Education class with the AIA. Courses taught by CivilTraining, LLC meet continuing education/professional development requirements for Alabama, Delaware Professional Engineers, Georgia, Illinois, Michigan, Nevada, New Mexico, Ohio, Pennsylvania, South Carolina, Tennessee Professional Engineers, Texas Professional Engineers, Utah, Virginia, and West Virginia and is approved for 8.0 Professional Development Hours by the State of Delaware Board of Professional Land Surveyors. CivilTraining, LLC is an approved Florida Board of Professional Engineers Continuing Education Provider for Area of Practice courses. CivilTraining, LLC, License No. CE84, is an approved Continuing Education Provider by the Florida Board of Professional Surveyors and Mappers; this course, number 8287, is approved for 8.0 general continuing education credit. The Indiana State Board of Registration for Professional Engineers has approved this course for continuing education, and CivilTraining, LLC is an approved Land Surveyor Continuing Education Provider by the Indiana State Board of Registration for Land Surveyors Professional Licensing Agency. This course is an approved Continuing Professional Development course by the Kentucky State Board of Licensure for Professional Engineers and Land Surveyors' Committee. CivilTraining, LLC is an approved provider of Continuing Professional Competency (CPC) requirements for Maryland Professional Engineers and Land Surveyors, approved by the Maryland Boards for Professional Engineers and Land Surveyors, and has received preapproval for this course by the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Landscape Architects. CivilTraining, LLC is an approved provider of Continuing Professional Competency courses for New Jersey Professional Engineers by the New Jersey State Board of Professional Engineers and Land Surveyors, and this course has received approval for Continuing Professional Competency for Continuing Education of Land Surveying by the New Jersey Board of Professional Engineers and Land Surveyor. CivilTraining, LLC, an approved sponsor of continuing education for Professional Engineers and Land Surveyors in New York State, NYS Sponsor #171, has received approval for the above-referenced PDHs for this course. CivilTraining, LLC is an approved sponsor for North Carolina Engineers and Land Surveyors, approved by the North Carolina Board of Examiners for Engineers and Surveyors. This course is approved for continuing education credits for Rhode Island Professional Land Surveyors by the Rhode Island State Board of Registration for Professional Land Surveyors, and the Tennessee Board of Examiners for Land Surveyors has reviewed and approved CivilTraining, LLC's training courses for continuing education. This educational activity has been approved by the Vermont Board of Land Surveyors for 8.0 hours of continuing education.

5300 Wellington Branch Drive • Suite 100 • Gainesville, VA 20155 • Phone 732.869.0592 • Fax 732.377.5454
john.cooke@civiltraining.com • www.civiltraining.com
A division of Wetland Studies and Solutions, Inc.
a DAVEY company