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Civil 3D 2011 for Surveyors

Course Description: Students learn how to import the converted field equipment survey data into a standardized environment in Civil 3D and to use the automation tools to create an Existing Condition Plan. Data collection, least square analysis, and traverses are also covered. Other topics that help in increasing efficiency include styles, proper AutoCAD drafting techniques, the methodology needed to create linework effectively for variables used in defining symbology, surfaces, categorizing points, and importing imagery.

Course Objective: To equip the surveyor with the basic knowledge needed to use Civil 3D efficiently in a typical daily workflow.

Topics include:

- The AutoCAD Civil 3D Interface
- Points overview and styles
- Importing points and coordinate transforms
- Creating points and drafting
- Point groups, grips, and reports
- Point security and editing
- Introduction to data collection in the field
- Introduction to Civil 3D Survey and automated linework
- Survey networks
- Survey Least Squares analysis
- Traverses and their adjustment
- Traverse Loop and Closed Connected Loop adjustments
- Surface overview
- Surface editing
- Surface labels and analysis

Prerequisites: Previous experience with AutoCAD and a basic understanding of the Surveying profession.

Course Contents:

Module 1 The AutoCAD Civil 3D Interface
- 1.1 Product Overview
- 1.2 AutoCAD Civil 3D Workspaces
- 1.3 AutoCAD Civil 3D User Interface
- 1.4 AutoCAD Civil 3D Toolspace
- 1.5 AutoCAD Civil 3D Panorama

Module 2 Survey Level 1
- 2.1 Survey Workflow Overview
- 2.1 Introduction to the Survey Toolspace
- 2.3 The Survey Toolspace
- 2.4 Survey Networks
- 2.5 Points Overview
- 2.6 Point Label Styles

2.7 Styles and Templates
2.8 Point Settings
2.9 Creating Points
2.10 Transparent Commands
2.11 Description Key Sets
2.12 Importing and Exporting Points
2.113 Point Groups
2.14 Reviewing and Editing Points
2.15 Locking/ Unlocking Points
2.16 Point Reports
2.17 Survey Figures
2.18 Importing a Field Book
2.19 Working with Figures

Module 3 Survey Level 2

3.1 Overview
3.2 Survey Equipment
3.3 Import Field Data
3.4 Figure Prefix Database
3.5 Field Codes
3.6 Survey Data- Figures
3.7 Survey Data – Line Code
3.8 Translating a Survey Database
3.9 Least Squares
3.10 Least Creating a Least Squares Input File
3.11 Traverses Basics
3.12 Defining a Travers
3.13 Multiple Network Surveys

Module 4 Surfaces Level 1

4.1 Surface Process
4.2 Surface Properties
4.3 Contour Data
4.4 Other Surface Data
4.5 Breaklines and Boundaries
4.6 Surface Analysis Tools
4.7 Surface Editing
4.8 Adjusting Surfaces through Surface Properties
4.9 Viewing Surfaces in 3D
4.10 Surface Labels
4.11 Surface Volume Calculations
4.12 Surface Analysis Display