

## Autodesk Civil 3D Essentials – 24.0 Hours (3 Days)

### Course Description

#### Summary

This class introduces the model-based design technology in Autodesk Civil 3D®, and provides the core for its application in civil engineering and survey projects of any type. The class examines the Civil 3D interface and environment, the management of settings and styles, and the development of civil project data, both from information developed within Civil 3D and from interaction with other products.

The Civil 3D Essentials class moves from an examination of the Civil 3D interface and concepts through the start of a typical survey and design project. Consideration is given to the best way to organize drawings and data for Civil 3D and to the organization and creation of a Project through the Civil 3D program. The class then proceeds through Existing Conditions Surface Modeling, the processing and display of Point Data, the layout, creation and editing of Alignments, and the creation of Parcels for ROW, lot and open space areas within the project.

#### Topics and Schedule

##### Civil 3D Concepts and Environment

- Civil 3D and AutoCAD® Interface
- Civil 3D Object Concepts
- Civil 3D Settings Hierarchy and Control of Civil 3D

##### Creating Data in Civil 3D - Existing Surface from Aerial Drawing

- Critical Surface Feature Settings
- Data Types for Digital Terrain Modeling
- Adding Spot Elevation Data
- Adding and Managing Contour Data
- Changing the Civil 3D Surface Appearance with Object Styles
- Creating Breakline Data from Drawing Information
- Surface Editing and Adding Surface Boundaries
- Surface Management in Civil 3D and Data Integrity

##### Working with Civil 3D Point Data

- Civil 3D Point Data Concepts
- Creating Point Data in Civil 3D
- Civil 3D Point Data Display with Object Styles and Label Styles
- Point Description Keys and Point Management
- Manipulating Point Display with Point Groups
- Importing Point Data from ASCII Files
- Point Data Editing

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### Working with Civil 3D Point Data (Continued)

- Point Data Organization with Point Groups
- Point Data Security and Civil 3D Point Locking
- Using the Civil 3D Survey Point Database for Project Points

### Surface Creation from Civil 3D Point Data

- Point Management for Surface Creation
- Breakline Creation from Civil 3D Points
- Merging Civil 3D Surfaces
- Surface Contour Display and Labeling with Surface Label Styles
- Surfaces and Volumes in Civil 3D

### Civil 3D Project Management

- Civil 3D Project Management Concepts and Tools
- Adding Surface Data to the Civil 3D Project
- Starting Multiple Drawings in the Project with Point and Surface Data
- Creating a Slope Analysis Drawing from Project Surface Data

### Civil 3D Alignments

- Civil 3D Alignment Concepts and Definition Options
- Civil 3D Alignment Feature Settings
- Alignment Display with Object Styles, Label Styles and Label Style Sets
- Civil 3D Site Concepts and Site Definition
- Creating Alignments by Layout
- Alignment Editing
- Managing Alignment Labels and Label Options
- Adding Alignments to the Civil 3D Project
- Referencing Alignments from the Civil 3D Project
- Project Drawing Organization and Alignment Use

### Civil 3D Parcels

- Civil 3D Parcel Concepts
- Parcel Object Styles and Label Styles
- Parcel Organization within Civil 3D Sites
- Parcel Interactions with AutoCAD Map and Map Topologies
- Creating Parcels from Drawing and Map Data
- Creating Parcels by Layout and Lot Sizing
- Parcel Numbering and Labeling
- Parcel Inverse, Map Check and Reporting Functions

### Prerequisites

Thorough familiarity with AutoCAD is essential.

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### Learning Objectives

1. Participants will be able to produce Digital Terrain Models from photogrammetric and surveyed data in the sample land development project used in the course.
2. Participants will be able to import, manage and stylize surveyed point data provided in the sample land development project used in the course.
3. Participants will be able to create and stylize baseline alignments for road centerlines in the sample land development project used in the course.
4. Participants will be able to size, create and annotate parcels and lots in the sample land development project used in the course.

<b>AUTODESK CIVIL 3D ESSENTIALS – THREE DAYS</b>	
Overall Course Length	24 Hours
Instructional Time	21 HOURS
<b>PROFESSIONAL DEVELOPMENT HOURS (PDHs)</b>	
New York State Land Surveyors	21.0 PDHs
New York State Professional Engineers	21.0 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 24.0 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 and is an approved Continuing Education Provider with the Florida Department of Agriculture and Consumer Services for the Board of Professional Surveyors and Mappers. 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; 12.0 hours can be claimed for continuing education credit. The Kentucky State Board of Licensure for Professional Engineers and Land Surveyors' Committee has approved this course for Continuing Professional Development. 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. The New Jersey State Board of Architects has approved this course for continuing education credits, 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 Surveyors. 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. 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, and this course is approved for 8.0 continuing education credits for Rhode Island Professional Land Surveyors by the Rhode Island State Board of Registration for Professional Land Surveyors. The Tennessee Board of Examiners for Land Surveyors has reviewed and approved CivilTraining, LLC's training courses for continuing education.

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5300 Wellington Branch Drive • Suite 100 • Gainesville, VA 20155 • Phone 732.869.0592 • Fax 732.377.5454

john.cooke@civiltraining.com • [www.civiltraining.com](http://www.civiltraining.com)

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