

---

**Course Title:**        **Civil 3D Introduction**

**Course Code:**        **CIV\_1**

**Duration:**            **2 Days**

### Courseware Description

The AutoCAD Civil 3D Fundamentals course is designed for Civil Engineers and Surveyors who want to take advantage of AutoCAD Civil 3D's interactive, dynamic design functionality. AutoCAD Civil 3D permits the rapid development of alternatives through its model-based design tools. You will learn techniques enabling you to organize project data, work with points, create and analyze surfaces, create parcel layouts.

### Objectives

Upon completion of the course, students will be able to:

- Import data through AutoCAD LandXML and from an Autodesk Land Desktop Project
- Create and manage Points and Point Groups
- Create, edit, view, and analyze surfaces
- Create parcels and parcel tables
- Create sites, create and edit alignments, and create profiles

### Who Should Attend

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

### Prerequisites

It is recommended that students have a working knowledge of:

- Completion of **ACAD-1** course or equivalent working knowledge of the content this course on a current or last release of AutoCAD.
- Microsoft® Windows® 7, Vista, XP or 2000

## Course Outline

### The AutoCAD Civil 3D Interface

- **AutoCAD Civil 3D Interface**

Product Overview

AutoCAD Civil 3D Workspaces

AutoCAD Civil 3D User Interface

AutoCAD Civil 3D Toolspace

AutoCAD Civil 3D Panorama

### Parcels

- **Parcels Overview**

Introduction to Parcels

- ROW Parcel

- Parcel Style Display Order

- Parcel Properties

- Parcel Labels and Styles

- Create Parcels from Objects

- Creating Right-of-Way Parcels

- **Subdividing Parcels**

Creating and Editing Parcels by Layout Overview

Creating and Editing Parcels

- Freehand

- Slide Line

- Swing Line

- Free Form Create

- Frontage

Renumbering Parcels

- **Parcel Reports, Annotation, and Tables**

Parcel Reports

Parcel Labels

Parcel Tables

### Survey

- **Civil 3D Survey Toolspace**

Survey Workflow Overview

Introduction to the Survey Toolspace

The Survey Toolspace

Survey Networks

- **Civil 3D Points**

Points Overview

Point Label Styles

- Information Tab

- General Tab

- Layout Tab

- Dragged State Tab

Styles and Templates

Point Settings

Creating Points

Transparent Command

Description Key Sets

Importing and Exporting Points

- To Import Points

- Duplicate Point Numbers

- Transforming Points on Import or Export

Point Groups

Reviewing and Editing Points

Locking/Unlocking Points

Point Locking and Editing

Point Reports

- **Civil 3D Survey Figures**

Survey Figures

- Drawing Settings

- Figure Styles

- Figure Prefix Database

Importing a Field Book

Working with Figures

### Surfaces

- **Civil 3D Surface Overview**

Surface Process

Surface Properties

Contour Data

- Weeding Factors

- Supplementing Factors

- Contour Issues

- Minimizing Flat Triangle Strategies

Other Surface Data

- DEM Files

- Drawing Objects

- Point Files

Breaklines and Boundaries

- Breaklines

Surface Analysis Tools

- Viewing a Surface in 3D

- Quick Profile

- **Civil 3D Surface Editing**

Surface Editing

- Line Edits

- Point Edits

- Smooth Contours

- Smooth Surface

- Copy Surface

- Surface Paste

- Raise/Lower Surface

Adjusting Surfaces through Surface Properties

Viewing Surfaces in 3D

- **Civil 3D Surface Labels and Analysis**

Surface Labels

- Contour Labels

- Spot and Slope Labels

Surface Volume Calculations

- Composite Volumes vista

- Bounded Volumes

- Grid Volume or TIN Volume Surface

Surface Analysis Display

- Analysis Settings

- Analysis Data Display

### Alignments

- **Civil 3D Alignments**

Roadway Design Overview

AutoCAD Civil 3D Sites

Alignments

- Criteria-Based Design

- Alignment Segment Types

- Alignment Layout Tools

- Alignment Editing

Alignment Properties

- Station Control Tab

- Design Criteria Tab

Labels and Tables

- Alignment Point Labels

- Independent Alignment Labels

- Alignment Table Styles

### Data Sharing

- **Data Sharing Overview**

AutoCAD Civil 3D Projects

- Single-Design Drawing Projects

- Multiple Drawings Sharing Data through

Shortcuts

- Multiple Drawings Sharing Data with Autodesk

Vault

Sharing Data

- **Data Shortcuts**

Data Shortcuts

- Update Notification

- Removing and Promoting Shortcuts

- eTransmit Data References

- Data Shortcut Workflow

- Workflow Details

- Advantages of Data Shortcuts

- Limitations of Data Shortcuts

- **Vault**

Vault Overview

- Key Terms

- Vault Architecture

Using the Vault Client

- Status Symbols in Civil 3D Toolspace

- Vault Workflow

### Grading

- **Grading Overview**

Grading Overview

- Feature Line Contextual Tab

- Elevation Editor

- Grading Creation Tools Toolbar

Configuring AutoCAD Civil 3D Grading

- Feature Line Labels

- Grading Criteria

- Grading Criteria Set

- Grading Volumes