

# Autodesk Civil 3D Professional Training

## Course Description

This comprehensive course is designed to equip participants with the essential skills and knowledge needed for efficient and effective use of Autodesk Civil 3D software. Participants will delve into the intricacies of Civil 3D, a powerful tool for civil engineering and infrastructure design, covering key aspects from the basics to advanced functionalities.

## Audience

This course is tailored for civil engineers, designers, drafters, and other professionals involved in infrastructure design projects. Whether you are a beginner seeking a solid foundation or an experienced user looking to enhance your skills, this course caters to a diverse audience in the civil engineering field.

## Pre-requisite Knowledge/Skills

Participants should have a basic understanding of civil engineering concepts and familiarity with computer-aided design (CAD) software. Basic knowledge of Autodesk Civil 3D is beneficial but not mandatory.

## Course Objectives

Upon completion of this course, participants will:

- Develop proficiency in navigating the Civil 3D user interface and understanding its elements.
- Set up and customize the design environment for efficient project workflows.
- Master data sharing techniques within Civil 3D, including file relationships and data shortcuts.
- Configure survey data effectively, from setup to analysis of existing conditions.
- Utilize points, lines, and curves to enhance design accuracy and efficiency.
- Create and manipulate surfaces, alignments, and profiles as foundational components in designs.
- Explore land development and roadway modeling tools for everyday use in site and road design.
- Apply advanced roadway modeling techniques for specific design scenarios.
- Implement utility modeling tools for proper site drainage and network design.
- Understand and execute section creation and analysis for comprehensive project evaluation.
- Automate sheet creation for plans, profiles, and cross-sections to streamline the documentation process.

# Course Outline

## Module 1: Introduction to Civil 3D

- What is Civil 3D?
- Exploring the Civil 3D user interface
- Understanding Civil 3D elements

## Module 2: Setting up the Design Environment

- Exploring the Toolspace within Civil 3D
- Customizing object styles and object label styles
- Expediting project work with file templates

## Module 3: Sharing Data within Civil 3D

- Understanding file relationships
- Learning how data shortcuts work
- Creating data shortcuts within Civil 3D

## Module 4: Configuring Survey Data with Civil 3D

- Survey setup
- Introduction to the Survey Toolspace
- Existing conditions display settings
- Survey workflow overview
- Analyzing existing conditions

## Module 5: Leveraging Points, Lines, and Curves

- Setting up a new file to import points from survey data
- Introduction to points
- Introduction to lines and curves

## Module 6: Surfaces - The First Foundational Component to Designs within Civil 3D

- Generating a surface model
- Understanding surface styles
- Surface manipulation and management

## Module 7: Alignments - The Second Foundational Component to Designs within Civil 3D

- Alignment creation
- Understanding alignment styles
- Alignment manipulation and management

#### Module 8: Profiles - The Third Foundational Component to Designs within Civil 3D

- Understanding ways to create a profile
- Setting up profile views
- Creating design profiles
- Understanding profiles and profile view styles
- Further analyzing profile and alignment geometry

#### Module 9: Land Development Tool Belt for Everyday Use

- Creating and managing parcels
- Creating and managing sites
- Leveraging grading tools for site design

#### Module 10: Roadway Modeling Tool Belt for Everyday Use

- Creating and managing assemblies
- Creating and modifying corridors
- Creating and modifying intersections and cul-de-sacs
- Creating a surface from corridors

#### Module 11: Advanced Roadway Modeling Tool Belt for Everyday Use

- Updating assemblies and designing driveways
- Designing a dead end
- Designing residential subdivision main entrance

#### Module 12: Utility Modeling Tool Belt for Everyday Use

- Refining proposed surface models for proper site drainage
- Creating and modifying storm drainage pipe networks
- Creating and modifying sanitary sewer pipe networks
- Creating and modifying pressure networks

#### Module 13: Section Creation and Analysis

- Creating sample lines along alignments
- Creating Section Views to display modeled objects
- Creating intelligent section sheets for plan production

#### Module 14: Automating Sheet Creation

- Automating Plan Sheet creation
- Automating Plan and Profile Sheet creation
- Automating Cross-Section Sheet Creation