

AutoCAD Civil 3D 2015 Fundamentals (Imperial)

Days: 4

Prerequisites: Experience with AutoCAD® or AutoCAD-based products (such as Autodesk® Land Desktop) and a sound understanding and knowledge of civil engineering terminology.

Description: The AutoCAD Civil 3D 2015 Fundamentals training guide is designed for Civil Engineers and Surveyors who want to take advantage of AutoCAD® Civil 3D® software's interactive, dynamic design functionality. The AutoCAD Civil 3D software 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, model road corridors, create parcel layouts, perform grading and volume calculation tasks, and layout pipe networks

Upon completion, you will be able to:

- Learn the AutoCAD Civil 3D user interface
- Create and edit parcels and print parcel reports
- Create points and point groups and work with survey figures
- Create, edit, view, and analyze surfaces
- Create and edit alignments
- Create data shortcuts
- Create sites, profiles, and cross-sections
- Create assemblies, corridors, and intersections
- Create grading solutions
- Create gravity fed and pressure pipe networks
- Perform quantity takeoff and volume calculations
- Use plan production tools to create plan and profile sheets

Chapter 1 The AutoCAD Civil 3D Interface

1.1 Product Overview

1.2 AutoCAD Civil 3D Workspaces

1.3 AutoCAD Civil 3D User Interface

Practice 1a Overview of AutoCAD Civil 3D and its User Interface

1.4 AutoCAD Civil 3D Toolspace

Prospector Tab

Settings Tab

Survey Tab

Toolbox Tab

1.5 AutoCAD Civil 3D Panorama

Practice 1b AutoCAD Civil 3D Toolspace

1.6 AutoCAD Civil 3D Templates, Settings, and Styles

Drawing Settings in Detail

Styles

Templates

Practice 1c AutoCAD Civil 3D Styles

Chapter 2 Project Management

2.1 AutoCAD Civil 3D Projects

Single-Design Drawing Projects

Multiple Drawings Sharing Data using

Shortcuts Multiple Drawings Sharing Data with Autodesk Vault

2.2 Sharing Data

2.3 Using Data Shortcuts for Project Management

Update Notification

Removing and Promoting Shortcuts

eTransmit Data References

Data Shortcut Workflow

Workflow Details

Advantages of Data Shortcuts

Limitations of Data Shortcuts

Practice 2a Starting a Project

Practice 2b Manage File Sizes with Data Shortcuts

Practice 2c Share Projects with Team Members

Outside the Office Network

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Chapter 3 Parcels

3.1 Lines and Curves

Practice 3a Beginning a Subdivision Project

3.2 Introduction to Parcels

ROW Parcel

Parcel Style Display Order

Parcel Properties

Parcel Labels and Styles

Create Parcels from Objects

Creating Right-of-Way Parcels

Practice 3b Create Parcels From Objects

3.3 Creating and Editing Parcels by Layout Overview

3.4 Creating and Editing Parcels

Freehand

Slide Line

Swing Line

Free Form Create

Frontage

Practice 3c Creating and Editing Parcels

3.5 Renumbering Parcels

Practice 3d Rename/Renumber Parcels

3.6 Parcel Reports

3.7 Parcel Labels

3.8 Parcel Tables

Practice 3e Reporting On and Annotating the
Parcel

Layout

Chapter 4 Survey

4.1 Survey Workflow Overview

4.2 Introduction to the Survey Tool space

4.3 Survey Figures

Figure Styles

Figure Prefix Database

Practice 4a Creating Figure Prefixes

4.4 Points Overview

Point Label Style

Practice 4b Point Marker Styles

4.5 Point Settings

4.6 Creating Points

Practice 4c Creating AutoCAD Civil 3D Points

4.7 Description Key Sets

Practice 4d Creating a Description Key Set

4.8 Importing Survey Data

To Import Points Only

Duplicate Point Numbers

Import Points and Figures Using the Survey
Database

Practice 4e Importing Survey Data

4.9 Point Groups

Practice 4f Creating Point Groups

4.10 Reviewing and Editing Points

Practice

4.11 Point Reports

Practice 4h Point Reports

Chapter 5 Surfaces

5.1 Surface Process

5.2 Surface Properties

5.3 Contour Data

Weeding Factors

Supplementing Factors

Contour Issues

Minimizing Flat Triangle Strategies

5.4 Other Surface Data

DEM Files

Drawing Objects

Point Files

Point Groups

Point Survey Queries

Figure Survey Queries

Practice 5a Creating an Existing Ground Surface

5.5 Breaklines and Boundaries

Breaklines

Practice 5b Add Additional Data to an Existing

Ground

Surface

5.6 Surface Editing

Line Edits

Point Edits

Simplify Surface

Smooth Contours

Smooth Surface

Copy Surface

Surface Paste

Raise/Lower Surface

5.7 Adjusting Surfaces through Surface Properties

5.8 Surface Analysis Tools

Viewing a Surface in 3D

Quick Profile

Practice 5c Surface Edits

5.9 Surface Labels

Contour Labels

Spot and Slope Labels

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5.10 Surface Volume Calculations

Volumes Dashboard
Bounded Volumes
Volume Reports
Grid Volume or TIN Volume Surface

5.11 Surface Analysis Display

Analysis Settings
Analysis Data Display
Practice 5d Surface Labeling and Analysis

Chapter 6 Alignments

6.1 Roadway Design Overview

6.2 AutoCAD Civil 3D Sites

6.3 Introduction to Alignments

Criteria-Based Design
Alignment Types
Alignment Segment Types
Practice 6a Creating Alignments from Objects

6.4 Alignments Layout Tools

Alignment Editing
Practice 6b Creating and Modifying Alignments

6.5 Alignment Properties

Station Control Tab
Design Criteria Tab

6.6 Labels and Tables

Alignment Point Labels
Independent Alignment Labels
Alignment Table Styles
Practice 6c Alignment Properties and Labels

Chapter 7 Profiles

7.1 Profiles Overview

Repositioning and Deleting Profile Views

7.2 Create a Profile View Style

7.3 Create Profiles from Surface

7.4 Create Profile View Wizard

Practice 7a Working with Profiles Part I

7.5 Finished Ground Profiles

7.6 Create and Edit Profiles

Transparent Commands
Assigning Profile Band Elevations
Profile Segment Types
Profile Labels
Practice 7b Working with Profiles Part II
Practice 7c Working with Profiles Additional
Practice

Chapter 8 Corridors

8.1 Assembly Overview

Assemblies
Subassemblies

8.2 Modifying Assemblies

Attaching Subassemblies
Detaching Subassemblies
Copying Assemblies
Mirroring Subassemblies
Select Similar Subassemblies
Sharing Assemblies
Getting More Information on Subassemblies
Practice 8a Creating Assemblies
Practice 8b Creating Assemblies Additional
Practice

8.3 Creating a Corridor

Target Mapping
Corridor Frequency

8.4 Corridor Properties

Information Tab
Parameters Tab
Codes
Feature Lines
Slope Patterns
Practice 8c Working with Corridors Part I

8.5 Designing Intersections

General Tab
Geometry Details Tab
Corridor Regions Tab
Practice 8d Working with Corridors Part II

8.6 Corridor Surfaces

Overhang Correction
Surface Boundaries

8.7 Corridor Section Review and Edit

Practice 8e Working with Corridors Part III

8.8 Corridor Visualization

Line of Sight Analysis
Practice 8f Working with Corridors Part IV

Chapter 9 Grading I

9.1 Grading Overview

9.2 Feature Lines

Feature Line Contextual Tab
Elevation Editor
Practice 9a Working with Feature Lines

9.3 Grading Tools

Grading Creation Tools Toolbar
Practice 9b Create Grading Groups

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9.4 Modifying AutoCAD Civil 3D

Grading

Grading Styles
Feature Line Labels
Grading Criteria
Grading Criteria Set
Grading Volumes
Practice 9c Modify Grading and Calculate Volumes

Chapter 10 Pipe Networks

10.1 Pipes Overview

10.2 Pipes Configuration

Practice 10a Configuring Pipe Networks

10.3 Creating Networks from Objects

Practice 10b Creating Pipe Networks by Objects

10.4 The Network Layout Toolbar

Practice 10c Creating Pipe Networks by Layout

10.5 Network Editing Pipe (and Structure) Properties

Swap Part

Connect/Disconnect From Part

Practice 10d Editing Pipe Networks

10.6 Annotating Pipe Networks

Pipe Networks in Sections

Pipe Network Reports and Tables

Practice 10e Annotating Pipe Networks

10.7 Pressure Pipe Networks

Practice 10f Create a Pressure Pipe Network

Chapter 11 Quantity Take Off/Sections

11.1 Sample Line Groups

Modifying Sample Line Groups

Practice 11a Creating Sections Part I

11.2 Section Volume Calculations

Earthwork Volumes

Mass Haul

Material Volumes

Quantity Takeoff Criteria

Define Materials

11.3 Pay Items

Practice 11c Quantity Take Off Part II - Integrated

Quantity Takeoff

11.4 Section Views

Section View Wizard

Practice 11d Creating Sections Part II

Chapter 12 Plan Production

12.1 Plan Production Tools

Overview

More Information

12.2 Plan Production Objects

View Frames

View Frame Groups

Match Lines

12.3 Plan Production Object Edits

Name

Description

Object style

View Frame Geometry Properties Edits

Match Line Geometry Properties Edits

Practice 12a Plan Production Tools I

12.4 Creating Sheets

Practice 12b Plan Production Tools II

12.5 Sheet Sets

Structuring Sheet Sets

Editing Sheet Sets

Sheet Set Manager Properties

Practice 12c Plan Production Tools III