AutoCAD Civil 3D 2010
Education Curriculum Instructor Guide, Unit Overview
Unit 1: Civil 3D Environment

Autodesk

Unit 1 - Civil 3D Environment

Unit 1 addresses the AutoCAD® Civil 3D® software environment, and discusses underlying concepts associated with the efficient use of AutoCAD Civil 3D. Topics of discussion in Unit 1 include the drawing environment, the user interface, and settings and styles. This unit sets the stage for learning how to perform various design and analysis functions using AutoCAD Civil 3D.

It is important that students work through the lessons in Unit 1 prior to completing the remaining units in this curriculum. The lessons in Unit 1 address important fundamental concepts that will assist with the comprehension of topics discussed in the other units.

The lessons contained in Unit 1 include the following:

- Lesson 1: Drawing Environment
- Lesson 2: Civil 3D Interface
- Lesson 3: Settings and Styles

Lesson 1 exposes students to the drawing environment in AutoCAD Civil 3D and includes elementary topics, such as drawing navigation and entity creation. Lesson 2 addresses the Civil 3D user interface and discusses elements such as the command windows, command lines, menus, and toolbars. Lesson 3 addresses the settings and styles used in AutoCAD Civil 3D that control the display of drawing objects and annotation.

Lesson 1 – Drawing Environment

This lesson describes the AutoCAD Civil 3D (AutoCAD®) software drawing environment. Whether refreshing your knowledge or learning for the first time, these exercises will help students develop familiarity with basic entity creation and modification, entity properties, layers, blocks, layouts, and template files. A strong knowledge of these basics will enable students to work with the AutoCAD Civil 3D lessons and software more efficiently.

This lesson is intended to help students become familiar with the basic drawing environment of Civil 3D, which is based on AutoCAD. Students who already have a strong working knowledge of this topic should proceed to Lesson 2, AutoCAD Civil 3D Interface.

Objectives

After completing this lesson, students will be able to:

- Navigate the Civil 3D drawing environment, zoom and pan to view objects, use the command window, use the Help system, and explore environment settings and function keys.
- Configure fundamental drawing settings and options such as Scale, Grid, Snap, Object Snap, file paths, and display colors.
- Create basic AutoCAD objects such as lines, polylines, circles, arcs, and polygons using menus, palettes, keyboard commands, mouse controls, coordinates, and object snaps.
- Modify AutoCAD objects using multiple techniques including grip editing and object properties
- Use layers to control object display.
- Navigate and view objects in 3D.
- Create reusable blocks.
- Use externally-referenced drawings in the current drawing.
- Draw objects in paper space (layouts) and configure one or more viewports in a layout.
- Create a properly formatted layout with required elements such as a title block, north arrow, border, and scale.
- Configure the page setup and plot layouts to an engineering scale.

Exercises

The following exercises are provided in a step-by-step format in this lesson:

1. Navigate the Civil 3D Drawing Environment
2. Review Options and Drawing Settings
3. Create Objects
4. Modify Objects

5. Navigate the 3D Drawing Environment
6. Create Blocks and Use External References
7. Work with Layouts and Viewports
8. Plot an Engineering Drawing to Scale

Lesson 2 - Civil 3D User Interface

Overview

This lesson describes the user interface in AutoCAD Civil 3D and explains how to manage the user interface to maximize productivity.

Civil 3D is a complex design and drafting environment. Users work with many interface components to accomplish design and drafting tasks. When used properly, the final drafting and production of engineering and construction drawings is a by-product of the design process.

Objectives

After completing this lesson, students will be able to:

- Navigate through the Civil 3D software.
- Use the user interface to open files and display static and contextual ribbons.
- Examine the two main components of Toolspace: the Prospector and Settings tabs.
- Describe the function of Toolspace in drawing creation and management.
- Use the Panorama window, Properties Palette, and Tool Palette
- Explore existing workspaces and create a custom workspace.
- Create reports using the Toolbox tab of Toolspace.

Exercises

The following exercises are provided in a step-by-step format in this lesson:

1. Explore the Civil 3D User Interface
2. Explore Toolspace
3. The Panorama Window, Properties and Tool Palettes
4. Work with Workspaces
5. Create Reports

Lesson 3 - Settings and Styles

This lesson describes various settings and styles that are used in AutoCAD Civil 3D. A strong understanding of these basics leads to more efficient use of the software and more consistency in the creation of design and production drawings.

Objectives

After completing this lesson, students will be able to:

- Describe the types of Civil 3D objects and their interactions.
- Create styles that control the display of Civil 3D objects.
- Create styles to annotate Civil 3D objects.
- Make modifications to object and label styles.
- Copy styles from one drawing to another drawing.
- Change drawing level, parent level, and child level styles and settings.
- Use drawing settings and viewport scaling to control text size.
- Use command settings to set default styles and object naming templates.
- Create a drawing template (DWT) file with customized styles and settings.

Exercises

The following exercises are provided in a step-by-step format in this lesson:

1. Examine Existing Object Display Styles
2. Create Object Display Styles
3. Create Object Annotation (Label) Styles
4. Modify Object and Label Styles
5. Use Styles Hierarchy to Modify Styles and Settings
6. Modify Drawing Settings, Viewport Scaling, and Text Size
7. Use Command Settings to Set Default Styles, Naming Templates, and Parameters
8. Create a Custom Drawing Template (DWT) File