South Central College

CTLS 1805 Civil CAD

Common Course Outline

Course Information

Description This course covers the use of AutoDesk Civil 3D software in the design and drawing of Civil Engineering plans. (Prerequisite: CTLS 1110)

Total Credits 3

Total Hours 64

Types of Instruction

Instruction Type	Credits/Hours
Lecture	2/32
Lab	1/32

Pre/Corequisites

CTLS 1110

Course Outcomes

1. Summarize the AutoCAD 3D working environment

Learning Objectives

Navigate the AutoCAD graphics environment
Identify various settings and styles in the Settings tab
Use floating dialog boxes to view and alter settings during a command
Use the toolspace window for modifying basic information
Create new drawings based on template files

2. Modify drawing settings and styles

Learning Objectives

Create styles
Make modifications to object and label styles
Change drawing level, parent level, and child level styles and settings
Use drawing settings and viewport scaling
Use command settings

3. Utilize the survey function

Learning Objectives

Configure and identify the main components of the Civil 3D survey environment

Create a survey database and network
Create figure styles to control the display of figures
Create figure prefixes to assign figure styles to figures
Describe the main characteristics of the Autodesk field book file format
Make changes to observation data in the survey database
Create points and figures from survey data

4. Use the points function

Learning Objectives
Import points to AutoCAD Civil 3D
Assign point styles and point label styles
Create points
Edit point data
Create a point table

5. Create and use surfaces

Learning Objectives
Create surface styles
Set the default style and naming template
Create a surface
Modify and edit the surface
Assign a contour style to a surface and apply surface labels

6. Create parcels

Learning Objectives
Create a right-of-way (ROW)
Create parcels
Edit parcel segments
Label parcels
Create a parcel table

7. Utilize horizontal alignments

Learning Objectives
Create alignments
Edit alignments
Create and modify alignment styles
Add alignment tables

8. Create existing and proposed profiles

Learning Objectives
Create a profile using an existing terrain surface
Create a design profile using layout tools
Edit profile geometry
Create and modify profile and profile view styles
Use labels and label styles for profiles and profile views

9. Create assemblies and corridors

Learning Objectives
Create a tool palette
Modify subassembly parameters
Create an assembly from subassemblies
Create a corridor model
Create a surface for the corridor top layer
Generate point data for construction staking
Extract grading feature lines from corridors

10. Perform site grading

Learning Objectives
Create and edit feature lines

Create an interim grading surface
Create feature lines from a surface
Create a final grading surface and calculate earthwork volumes

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Contact us: Faribault A116 (507) 332-5847. North Mankato E112 (507) 389-7222. ds@southcentral.edu
www.southcentral.edu/disability