



## Terrain Modeling, Contouring and Analysis in AutoCAD Civil 3D

This course examines the creation of Digital Terrain Models, or Surfaces, in AutoCAD® Civil 3D®, with an emphasis on producing highly accurate models as efficiently as possible from survey data. Since the Civil 3D Surface is also the basis for contouring and analysis within the program, better surfaces yield better contouring and analysis results. The class reviews the data types for terrain modeling – point, breakline and contour data - and how their use is facilitated with survey data transferred into the drawing from field work. The class will examine how breakline data can be captured and included in the Civil 3D TIN, through the use of Civil 3D tools and from other solutions, including Carlson® and SmartDraft®. The course will examine various strategies for filtering point data for inclusion in the Civil 3D Surface, including Point Groups, Description Keys and other tools. Major topics also include the assessment of surface accuracy and surface editing, techniques for improving the quality of contouring, surface presentation and annotation styles, and the use of surfaces in analysis functions such as slope and drainage assessment.

### Learning Objectives

1. Participants will be able to describe the process for building surfaces in Civil 3D from survey fieldwork as illustrated using the sample survey project used in the course.
2. Participants will be able to describe surface display and annotation controls exercised by Civil 3D styles as illustrated using the sample survey project used in the course.
3. Participants will be able to describe the process for building breakline data for surface creation, either through field-to-finish processing or manual construction within a drawing, as illustrated using the sample survey project used in the course.
4. Participants will be able to describe methods for assessing surface accuracy and performing surface editing as illustrated using the sample survey project used in the course.

