

Autodesk Civil 3D Essentials - Project Workflow

Oriented Training

Target Audience

This course is designed for civil engineers, civil designers, infrastructure designers, surveyors, CAD technicians, and BIM professionals who are involved in the planning, design, documentation, and coordination of civil infrastructure projects. It is particularly suitable for professionals working on roads, land development, earthworks, drainage, utilities, and site grading projects and who want to develop practical skills in Autodesk Civil 3D using industry-standard workflows.

Course Objectives

By the end of this course, participants will be able to:

1. Navigate and configure Autodesk Civil 3D and establish project drawings using survey data, existing surfaces, styles, labels, and data shortcuts.
2. Develop roadway and linear infrastructure designs by creating alignments, profiles, assemblies, corridors, corridor surfaces, and cross sections.
3. Perform earthwork and quantity analysis by calculating corridor and grading volumes and interpreting the results for project planning and construction.
4. Design and document underground infrastructure using pipe networks, pipe profiles, crossing utilities, and long-section workflows.
5. Create professional project documentation and visualisations using plan production, annotation, styles, labels, and workflows aligned with ANZ and company-specific standards.

Course Outcomes

After successfully completing this course, participants will be able to:

- Create and manage Civil 3D projects from survey data through existing surface creation, data shortcuts, styles, and annotation.
- Design complete roadway corridors, including alignments, profiles, assemblies, corridor targets, corridor surfaces, and cross sections.
- Analyse and quantify earthworks by generating corridor and grading volumes for cut-and-fill estimation and project reporting.
- Develop pipe network designs and produce long sections showing underground utilities and pipe crossings for effective infrastructure coordination.
- Create grading designs and calculate grading volumes for site development and earthwork projects.

- Produce construction-ready drawings and documentation, including plan sheets, long sections, cross sections, bands, labels, and other project deliverables.
- Apply dynamic Civil 3D workflows where changes to alignments, profiles, assemblies, corridors, and grading designs automatically update dependent project elements.
- Use visualisation and checking workflows to identify design issues and improve the accuracy, consistency, and quality of civil infrastructure models.

Course Outline

Duration – 16hrs (2 days)

Table of Contents: -

Module 1 – User Interface | Import Survey Data | Surface Creation: Learn how to confidently navigate the Civil 3D user interface, optimising settings to suit your workflow. In this module, you will explore how to start design drawings by importing survey data and creating an existing surface, which forms the foundation of your project. Understanding these essential steps will provide a solid starting point for more advanced design tasks in Civil 3D.

Module 2 – Data Shortcuts | Styles Editing | Labels: Explore how to effectively use data shortcuts to manage design elements across multiple drawings in Civil 3D. Learn how to customise styles and labels to align with industry standards, ensuring your project documentation is clear, consistent, and efficient. By integrating these tools into your workflow, you will simplify the management of design elements across multiple files, improving overall project organisation.

Module 3 – Alignments | Long Sections | Bands & Labels: Gain experience in laying out alignments for roadways or other linear projects. In this module, you will practise creating long sections paired with the alignments to display existing ground levels accurately. You will also learn how to customise bands and labels to meet ANZ project standards, ensuring that your designs are clear and compliant with regional requirements.

Module 4 – Profiles | Assemblies | Creating Corridors: Learn how to create design profiles and use assemblies to define corridor structures. Practise building dynamic corridors and explore how modifications to profiles and assemblies automatically update the corridor designs, ensuring efficiency and accuracy throughout the project. This module will help you gain confidence in managing corridor models and understanding their interdependencies.

Module 5 – Corridor Targets | Corridor Surfaces | Visualisations: Explore how to edit corridors dynamically and create corridor surfaces efficiently. You will also learn how to use visualisation tools to check and refine your corridor designs, ensuring accuracy before moving on to subsequent project phases. This module focuses on improving the precision and quality of your corridor models through effective design refinement.

Module 6 – Corridor Volumes | Cross Sections | Plan Production: Learn how to calculate earthwork volumes for your corridors, generating accurate data essential for construction and planning. You will practise creating and customising cross sections and plan sheets, ensuring adherence to ANZ and company-specific standards. Through this module, you will develop the skills needed to produce precise documentation that supports efficient project execution and regulatory compliance.

Module 7 – Pipe Layout | Pipe Long Sections | Crossing Pipes: Learn how to lay out pipe networks and generate pipe long sections, incorporating crossing utilities for a clear and detailed representation of underground infrastructure. In this module, you will explore tools to ensure accuracy in your designs, helping you avoid clashes, maintain proper alignment with other design elements, and ensure efficient coordination across your project.

Module 8 – Sites | Grading Creation | Grading Volumes: Practise utilising sites and grading tools to design complex earthworks with precision and efficiency. You will calculate grading volumes to ensure accurate reporting for excavation and fill requirements, helping you manage material quantities effectively. You will also learn how to adjust your grading designs to meet project specifications and improve overall project management.