

Autodesk Civil 3D- Complete Road Design Course

1. TARGET AUDIENCE:

This course is designed for civil engineering students, highway and transportation engineers, CAD technicians, surveyors, and infrastructure professionals who want to master roadway design using Civil 3D. It also benefits architects, urban planners, and career switchers seeking practical skills in road and infrastructure projects.

2. COURSE OBJECTIVE:

The objective of this course is to provide learners with a complete understanding of roadway engineering principles and hands-on Civil 3D workflows. It aims to bridge theory and practice, enabling participants to design professional road projects from survey data to construction-ready plans.

3. COURSE OUTCOMES:

By the end of the course, learners will be able to confidently design full roadway projects using Civil 3D. They will gain expertise in creating surfaces, alignments, profiles, corridors, intersections, roundabouts, and mass haul diagrams, while applying industry standards for safe and efficient road design.

4. COURSE OUTLINE:

The course comprises **32 hours** of theory and labs and is divided into **11** different chapters. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

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- Civil 3d Interface Basics

Module 2. AutoCAD Fundamentals

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- Blocks And External References
- Annotation Essentials

Module 3. Highway Geometric Design

- Roadway Engineering Fundamentals
- Sight Distance and Design Standards

Module 4. Points And Surfaces

- Creating And Managing Points
- Surface Modelling and Analysis

Module 5. Alignments And Profiles

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- Criteria-Based Alignment Design

Module 6. Superelevation And Assemblies

- Superelevation Design
- Assemblies And Subassemblies

Module 7. Corridor Modelling

- Corridor Creation and Editing.
- Corridor Surfaces and Transitions

Module 8. Sections And Earthwork

- Sample Lines and Section Views
- Mass Haul Diagrams
- Cut/Fill Analysis

Module 9. Advance Roadway Design

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Module 10. Drainage And Utilities

- Stormwater Drainage Design
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Module 11. Plan Production

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- Sheet Sets and Pdf Exports.