

Civil 3D Certificate Program

Develop the skills to design and refurbish public infrastructure using AutoCAD Civil 3D. This hands-on program prepares you for a career in civil engineering, focusing on 3D modeling, data management, and real-world project applications.

Group classes in Live Online and onsite training is available for this course. For more information, email partnerships@vdci.edu or visit: <https://vdci.edu/certificates/civil-3d-certificate-program>



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Course Outline

This package includes these courses

- Introduction to AutoCAD (30 Hours)
- Intermediate AutoCAD (30 Hours)
- Intermediate Civil 3D: Surveying and Mapping (30 Hours)
- Intermediate Civil 3D: Transportation Design (30 Hours)
- Intermediate Civil 3D: Land Development (30 Hours)
- Civil 3D Certificate Elective Courses (80 Hours)
- Capstone Project (60 Hours)

Introduction to AutoCAD

We start at the very beginning, using AutoCAD to draw drafting symbols, kitchen and bath fixtures, and then create a floor plan.

We assemble everything into one sheet file. Learn about Drawing on Layers, Adding Text, Dimensions & Plotting.

- Create drafting symbols, kitchen and bath fixtures, a floor plan and integrate all information into one deliverable sheet file.
- Distinguish the differences required to generate drawings for use as annotation and real-world model components.
- Create and insert blocks and externally reference files and determine the appropriate times to apply those skill sets.
- Master file management, drafting on layers, integrating drawing component files and plotting while creating on the class residential project.

Intermediate AutoCAD

Use AutoCAD to draw an abbreviated set of construction documents for a residential project: floor plan, roof plan, foundation plan, electrical plan & building elevations. Create, insert and link drawings. Learn the best workflow.

- Create an abbreviated set of construction documents including floor plan, foundation plan, electrical plan and building elevations for a small residential project.
- Create and insert blocks, externally reference files and determine the appropriate times to apply those skill sets to optimize project

efficiency.

- Demonstrate layer and file management, external file referencing, use of model/layout environments and user coordinate systems.
- Apply intermediate-level skills including layer management, user coordinate system development, creating sheet layout environments and plotting.

Intermediate Civil 3D: Surveying and Mapping

In the Intermediate Civil 3D: Surveying and Mapping course, students create, label, and organize points, prepare key sets, and manage parcel and surface data within Civil 3D. The course walks through the process of performing survey imports, subdividing parcels, and modifying their display styles.

- **Create, Label, and Organize Points into Groups:** Learn how to create and label points, then organize them into point groups for easier management in Civil 3D. This will help you streamline the process of dealing with large survey datasets.
- **Prepare Description Key Sets and Linework Code Sets:** Develop Civil 3D description key sets, linework code sets, and figure prefix databases. These tools are essential for organizing and efficiently processing survey data.
- **Perform Survey Imports & Subdivide Parcels:** Gain skills in importing survey data and creating parcels. Learn to subdivide parcels, modify display styles, and label parcel areas and segments for accurate land design.
- **Create TIN Surfaces and Edit Definitions:** Learn how to create and edit TIN surfaces in Civil 3D, label surfaces, and make necessary modifications to surface definitions for accurate terrain modeling.

Intermediate Civil 3D: Transportation Design

In this course you will become familiar with alignments, surface profiles, design profiles and view windows, assemblies, corridors, intersections, sample lines, cross sections, and 3D visualization.

- Create multiple types of alignments
- Develop surface and design profiles
- Adjust profile view windows
- Label both alignments and profiles
- Build corridors with the required sub-elements and create a cul-de-sac
- Create an intersection corridor and create sample lines along a corridor
- Display cross sections
- Visualize a roadway in a 3-dimensional drive through

Intermediate Civil 3D: Land Development

In this course you will build drawing template files, utilize data shortcuts, work with feature lines, learn about site interactions, create grading groups, lay out pipe networks, and draft pressure networks.

- Create multiple Civil 3D object and label styles
- Develop a custom drawing template file
- Manage data shortcuts
- Create and edit feature lines and grading groups
- Learn about pipe and pressure parts catalogs
- Layout pipe and pressure networks
- Annotate pipe and pressure networks
- Create a custom drawing sheet

Civil 3D Certificate Elective Courses

Select 60-80 clock hours of elective courses to complement your Civil 3D Certificate Program training. You can specialize in AutoCAD, Revit Architecture, or SketchUp Pro.

Capstone Project

The VDCI Capstone Project course empowers students to apply their acquired skills in a real-world, project-based environment. Participants will complete a comprehensive design or construction project from concept to execution, showcasing their expertise in software like AutoCAD, Revit, or other industry-standard tools. This hands-on experience prepares students to excel in professional roles by demonstrating their ability to manage and deliver complex, detail-oriented projects.