

# CAD Certificate Program

Learn 2D drafting skills with AutoCAD and enhance your design capabilities with specialized tools like Revit and SketchUp. This program prepares you for a successful career in construction design, with real-world applications and project-based learning.

Group classes in Live Online and onsite training is available for this course. For more information, email [partnerships@vdc.edu](mailto:partnerships@vdc.edu) or visit: <https://vdc.edu/certificates/cad-certificate-program>



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## Course Outline

This package includes these courses

- Intro to AutoCAD Course Online (30 Hours)
- Intermediate AutoCAD Course Online (30 Hours)
- AutoCAD Construction Documents I Course Online (30 Hours)
- AutoCAD Construction Documents II Course Online (30 Hours)
- CAD Detailing (20 Hours)
- CAD Project Management Course Online (20 Hours)
- CAD Certificate Elective Courses (80 Hours)
- Capstone Project (0 hours)

### Intro to AutoCAD Course Online

Learn AutoCAD online from the very beginning, drawing drafting symbols, kitchen and bath fixtures, and then a floor plan. We assemble everything into one deliverable sheet file. In this Introduction to AutoCAD class, become familiar with the AutoCAD user interface and basic AutoCAD commands, including Drawing, Modifying, Layering Standards, Text, Dimensioning and Plotting. You will draw a floor plan for a small Habitat for Humanity residential project, starting at the very beginning. You will be provided source AutoCAD files, which you will use to start your project.

- 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 Course Online

In this course, you will draft an abbreviated set of CAD construction documents for a Habitat for Humanity project, including

floor plan, roof plan, foundation plan, electrical plan, and building elevations. Create and insert blocks, externally reference files, and determine the appropriate times to use these commands to optimize project workflow. Create, insert, and link drawings. You will learn the best workflow. This course reinforces basic understanding of AutoCAD and develops experience in more advanced applications. Topics include file referencing across the project data, user coordinate systems, dynamic viewing, and paper/model space conventions. Advanced AutoCAD commands and drafting conventions are heavily stressed in this online AutoCAD course.

- 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 environment,s and user coordinate systems.
- Apply intermediate-level skills including layer management, user coordinate system development, creating sheet layout environments, and plotting.

## **AutoCAD Construction Documents I Course Online**

In this course, we use AutoCAD to develop titleblock drawings from scratch, draft a floor plan, multi-scale enlarged plans, roof plan and building elevations for a more complicated one-story residence. You will learn important, relevant & practical CAD workflow skills, including AutoCAD commands, menuing systems and project workflow. The course covers two-dimensional (2D) drawing commands and drafting techniques for developing construction documents, including dimensioning, layout environments, layering systems and plotting.

- Create titleblock and titleblock/drawing label components for a professional office to facilitate development of deliverable sheet files.
- Create floor plan, enlarged plan, roof plan and building elevation of a moderately complex residential project. Includes the development of floor plan, roof plan and elevation notes.
- Successfully integrate referenced files to create construction documents. Demonstrate layer and file management, use of model/layout environments and multi-scale drawing presentation.
- Organize deliverable sheet set to conform to the National CAD Standards.
- Apply intermediate-level skills to create sheet layout environments and plotting.

## **AutoCAD Construction Documents II Course Online**

AutoCAD Construction Documents II is an advanced-level course designed to elevate your expertise in producing professional construction documents using AutoCAD. This course builds upon fundamental drafting and AutoCAD skills, focusing on the creation of precise, detailed construction drawings that meet industry standards. You will learn how to create cohesive and technically accurate sets of plans, allowing for better communication across various teams within architectural, engineering, and construction project workflows. Throughout the course, you will work on producing detailed layouts, refining annotation techniques, and ensuring consistency across multiple drawing sheets. You'll also explore layer management, plotting styles, and building custom blocks, providing you with a solid foundation to handle complex construction documentation efficiently. By the end of this course, you will have developed a thorough understanding of advanced AutoCAD tools and workflows, empowering you to create professional-level documents for real-world applications.

- Create building elevations, building sections, wall sections; modify detail drawings; create metes and bounds (Civil) drawing; create relevant deliverable sheet files for a moderately complex residential project. Includes the development of title sheet and appropriate general and keynote legends.
- Successfully integrate referenced files to create construction documents. Demonstrate layer and file management, use of model/layout

environments and multi-scale drawing presentations.

- Apply intermediate/advanced-level skills to create sheet layout environments and plotting.
- Organize deliverable sheet set to conform to the National CAD Standards.

## **CAD Detailing**

Create detail drawings. Learn the two dominant CAD standards AEC firms use – making detail drawings from scratch and by referencing and clipping information from other drawings. Learn drawing standards and about organizing your details.

- Create detail drawings pertinent to the course project.
- Create relevant deliverable sheet files.
- Integrate referenced files to create details for construction documents.
- Demonstrate layer and file management, use of model/layout environments and multi-scale drawing presentations.
- Apply intermediate/advanced-level skills to create sheet layout environments and plotting.

## **CAD Project Management Course Online**

This course bridges the gap between CAD drafting and project management by teaching students how to effectively manage projects while utilizing AutoCAD. Through a combination of hands-on exercises and theoretical concepts, participants will learn to coordinate workflows, ensure project accuracy, and streamline communication among team members. The course places a strong emphasis on adhering to industry standards and integrating best practices into real-world applications. Students will complete exercises that simulate typical project management scenarios, helping them refine both their technical and organizational skills.

- Demonstrate understanding of the technical and managerial skills required to succeed as a CAD and Project Manager.
- Organize the AutoCAD User Interface to optimize productivity and standards for an office.
- Use office standard file naming and file organization.
- Master an understanding of the National CAD Standards.
- Convert “an inherited CAD project” into a format that supports the National CAD Standards and Office CAD Standards.

## **CAD Certificate Elective Courses**

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