COURSE SYLLABUS

CAD/BIM Certificate

Build expertise in both AutoCAD and Revit to excel in drafting and building information modeling (BIM). This program prepares you for a dynamic career in the construction and design industries through hands-on, real-world projects.

> Group classes (NYC) and onsite training are available for this course. For more information, email corporate@nobledesktop.com or visit: https://www.nobledesktop.com/certificates/cad-bim



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Course Outline

This package includes these courses

- Commercial Blueprint Reading (6 Hours)
- Residential Blueprint Reading (6 Hours)
- Construction Estimating (6 Hours)
- AutoCAD Level I (18 Hours)
- AutoCAD Level II (12 Hours)
- AutoCAD Level III (18 Hours)
- AutoCAD Construction Documents I (18 Hours)
- AutoCAD Construction Documents II (12 Hours)
- Civil 3D Professional Bootcamp (24 Hours)
- Introduction to Revit (18 Hours)
- Intermediate Revit (18 Hours)
- BIM Construction Documents I (12 Hours)
- BIM Construction Documents II (6 Hours)
- Revit Mechanical Course (12 Hours)
- Revit Electrical Course (12 Hours)
- Revit Plumbing (12 Hours)
- CAD/BIM Capstone Project (18 Hours)
- CAD/BIM Industry & Portfolio (12 Hours)

Commercial Blueprint Reading

This course is designed to provide students with the foundational skills and insights necessary to interpret and analyze commercial construction drawings.

- Explore how to navigate and interpret various plan types, including architectural, structural, MEP (mechanical, electrical, and plumbing), and site drawings

- Understand how different sets of drawings relate to one another and identify overlapping details across plan sets
- Analyze actual blueprint examples and construction documents to apply your learning in a practical context
- Learn how professionals use construction drawings for estimating costs, scheduling, and ensuring accurate execution on-site

Residential Blueprint Reading

This course offers a detailed introduction to reading and interpreting residential construction blueprints. Perfect for both newcomers entering the construction field and experienced professionals looking to sharpen their blueprint reading skills, this live, instructor-led course covers topics such as architectural notations, symbols, scales, and abbreviations. You'll learn how to interpret key residential drawings, including floor plans, elevations, sections, and construction details, to gain a full understanding of how to translate design documents into built environments.

- Understand how different drawings work together within a full set of construction documents
- Examine how scale is used across various types of drawings in a blueprint set
- Identify recurring elements and formatting across blueprint submissions for building permits
- Learn why consistent formatting and information presentation are critical across all construction documents

Construction Estimating

This course introduces students to the core principles and techniques used in the estimating process. You'll examine the purpose of estimating and build the skills needed to create accurate and professional estimates. Topics include quantity takeoffs, pricing based on measured quantities, and the components of a well-structured cost estimate proposal. Estimating plays a critical role in construction, from bidding to project planning, and is essential for contractors, project managers, and estimators.

- Build foundational estimating skills for both residential and commercial construction projects
- Learn how to extract pricing data by reading architectural and structural construction documents
- Compare estimate types, including preliminary, detailed, and conceptual cost forecasting
- Understand how to calculate material quantities, labor, equipment, and other project-related costs
- Get familiar with commonly used construction estimating tools and digital software
- Strengthen your ability to spot cost issues early and adjust estimates to minimize financial risk

AutoCAD Level I

This hands-on course introduces students to the essential tools and techniques used to create mechanical and architectural drawings. Through real-world projects and step-by-step instruction, you'll build confidence in using AutoCAD for professional drafting and design.

- Learn core drawing and editing commands to create and modify lines, circles, rectangles, and more
- Master object snap, tracking, and coordinate input to ensure precision and accuracy in every drawing
- Organize and manage your work with layers, templates, and advanced object types like polylines and ellipses
- Apply real-world workflows in drawing complex layouts, floor plans, and design elements for mechanical and architectural projects
- Insert, manage, and reuse blocks with tools like Tool Palettes and Design Center
- Prepare your drawings for print with layouts, viewports, annotations, and dimensioning tools

AutoCAD Level II

This intermediate AutoCAD course builds on the fundamentals, equipping students with advanced techniques for productivity, organization, and precision. Through hands-on projects, you'll learn how to streamline your workflow, manage complex drawings, and prepare professional documentation for print and collaboration.

- Improve productivity with advanced tools for accurate positioning, parametric constraints, and block usage
- Learn how to create, organize, and manage reusable content through custom block libraries
- Set up and customize drawing templates to maintain consistency across multiple projects
- Design and manage advanced layouts with viewports, paper space, and scaling techniques for print-ready drawings.
- Master annotation styles to ensure clarity and standardization in dimensions, text, and hatching
- Integrate external references (Xrefs) into your workflow to manage large-scale drawings and collaborate across teams

AutoCAD Level III

This advanced AutoCAD course is designed for experienced users looking to deepen their expertise through powerful annotation tools, dynamic content creation, and customized workflows. You'll gain the skills needed to streamline complex projects, collaborate efficiently, and tailor AutoCAD to fit your professional needs.

- Enhance drawings with advanced annotation tools, tables, and text objects for greater clarity and control
- Create dynamic blocks and attribute data to build smarter, more versatile design components
- Develop and publish professional drawing sets using sheet sets, layout tools, and collaborative features
- Customize the AutoCAD interface with user-defined settings, tool palettes, and productivity-enhancing macros
- Establish and enforce CAD standards across teams for consistent, high-quality output
- Learn tools for 2D automation and cloud-based collaboration to streamline workflows

AutoCAD Construction Documents I

In this course, you'll use AutoCAD to build titleblock drawings from the ground up and draft detailed residential documents, including floor plans, enlarged views, roof plans, and building elevations for a moderately complex single-story home. You'll gain practical CAD workflow experience, learning key AutoCAD commands, interface navigation, and project-based processes. The course focuses on essential 2D drafting techniques used in construction documentation such as dimensioning, layout configuration, layer management, and plotting procedures.

- Design titleblocks and drawing labels used by professional offices to generate complete sheet sets
- Draft comprehensive floor plans, roof plans, enlarged views, and elevations for a mid-level residential structure, including annotation and detailing
- Integrate external references while demonstrating effective layer control, model/layout usage, and multi-scale presentation
- Structure final sheet sets in compliance with National CAD Standards to ensure industry-ready documentation
- Apply intermediate AutoCAD techniques to create accurate layouts and configure plotting for deliverables

AutoCAD Construction Documents II

This advanced course is designed to strengthen your ability to produce accurate construction documentation using AutoCAD. Building on foundational drafting and CAD knowledge, this course emphasizes the creation of detailed drawings that support clear communication across architecture, engineering, and construction teams. You'll focus on refining layout organization, annotation techniques, and drawing consistency across full project sets. In addition, the course covers advanced layer control, plotting configurations, and custom block creation to prepare you for more complex drafting demands.

- Draft building elevations, wall sections, and site-specific drawings such as metes and bounds plans for a complex residential design
- Work with external references to compile complete drawing sets while managing layers, viewports, and multi-scale layouts
- Apply advanced drafting techniques to organize sheet sets and prepare polished, ready-to-plot construction documents
- Format deliverables to align with widely accepted architectural and engineering drawing standards

Civil 3D Professional Bootcamp

Master advanced Civil 3D techniques used in professional surveying, transportation design, and land development projects. In this hands-on bootcamp, you'll gain practical experience with tools like alignments, profiles, parcels, corridors, grading groups, and pipe networks, all essential for producing construction-ready documentation. Taught by industry experts, this course is available in NYC or live online.

- Create and manage survey points, parcels, and surface data
- Develop alignments, profiles, and corridor models for road design
- Subdivide land and label parcel geometry using Civil 3D tools
- Design and annotate grading groups, pipe networks, and pressure systems
- Build and customize templates, label styles, and construction documents

Introduction to Revit

Learn the industry-leading software for Building Information Modeling (BIM) with this Revit course at Noble Desktop. Whether you are an aspiring architect, engineer, or designer, this hands-on course will equip you with the essential skills to design, document, and analyze buildings and structures more efficiently. Guided by expert instructors, this course combines practical exercises with real-world examples to ensure you master the fundamentals of Revit.

- Understand the Revit interface, workspace, and essential tools to get started in Revit
- Learn to create parametric 3D models of buildings, including walls, doors, windows, roofs, and floors
- Master the process of generating construction documents such as floor plans, sections, and elevations directly from your Revit models
- Explore how to create and manage Revit families to customize components for your projects
- Discover how to create photorealistic renderings and walkthroughs to bring your designs to life
- Gain insight into Revit’s collaboration features to manage multi-disciplinary project teams effectively

Intermediate Revit

Take your Revit expertise to new heights with this comprehensive course offered at Noble Desktop. Designed for professionals with a foundational understanding of Revit, this course is ideal for advancing your skills, enhancing productivity, and creating intricate, detail-rich project designs. Explore advanced tools, workflows, and techniques in a practical and industry-relevant way to elevate your Revit proficiency. This course dives deep into advanced Revit features, providing hands-on training to ensure you gain valuable, real-world skills.

- Develop complex 3D models and refine your designs using Revit’s advanced modeling tools. Learn how to handle more detailed components of architecture and engineering projects effectively
- Explore tools and features to enhance efficiency, streamline workflows, and improve project coordination among multi-disciplinary teams
- Produce high-quality, professional-level construction documents, complete with annotations, schedules, and precise detailing to meet industry standards
- Master viewport management, visibility settings, and presentation techniques to bring your designs to life in a visually compelling way
- Learn advanced family creation techniques to build and customize parametric components, providing flexibility and adaptability across

projects

BIM Construction Documents I

Take your BIM knowledge to the next level. This course is specifically designed to equip you with the foundational skills necessary to create, manage, and deliver comprehensive construction documents using Building Information Modeling tools. Whether you are a designer, architect, or project manager, this course will provide you with the understanding and techniques required to effectively produce accurate and detailed documentation for your projects.

- Understand the role of construction documents in the building lifecycle and their relationship with BIM processes
- Learn how to create clear and concise annotations, schedules, and detailed views that aid in communication across project stakeholders
- Develop professional sheet layouts using industry-standard practices to ensure consistency and readability
- Discover how to collaborate effectively within a multidisciplinary team, ensuring seamless integration of design models into project documentation
- Gain knowledge on reviewing and troubleshooting documentation to reduce errors and improve project outcomes

BIM Construction Documents II

This course is designed for individuals who have completed the introductory course or possess equivalent knowledge. It dives deeper into advanced documentation techniques, focusing on efficiency, accuracy, and adherence to industry standards. With hands-on practice and expert-led instruction, you will gain invaluable experience that enhances your ability to produce complex project documentation.

- Master advanced features and tools in Revit for creating detailed drawings and construction documentation
- Learn how to work with complex models and integrate additional BIM data into your documents
- Improve accuracy and consistency across all phases of documentation
- Explore strategies for managing large-scale projects and collaborating with multidisciplinary teams
- Gain insights into industry best practices for creating professional, high-quality deliverables

Revit Mechanical Course

Master the essentials of creating and managing mechanical systems in Autodesk Revit with this course. This comprehensive program is tailored for design and construction professionals who want to elevate their Building Information Modeling (BIM) expertise in mechanical systems design. Whether you are an experienced professional or just beginning your Revit Mechanical learning journey, this course provides the tools and techniques needed to excel in real-world applications. This course focuses on equipping students with the ability to design, analyze, and document mechanical systems efficiently.

- Understanding and implementing Revit’s tools for HVAC and plumbing system design
- Creating and managing 3D mechanical components, families, and system types
- Laying out equipment and ductwork while maintaining system accuracy and connectivity
- Coordinating mechanical systems with other disciplines in a collaborative BIM environment
- Producing high-quality construction documents and schedules for mechanical systems
- Navigating advanced workflows to solve system design challenges

Revit Electrical Course

This course is a comprehensive training program designed to teach students how to efficiently design and document electrical

systems using Autodesk Revit. It covers essential concepts and workflows for electrical design, including circuiting, panel schedules, power distribution, and lighting layouts.

- Utilize Autodesk Revit for electrical design and documentation, applying core BIM concepts to electrical systems
- Create and modify electrical plans including power distribution and lighting layouts with precision and accuracy
- Annotate, document, and present electrical designs professionally within Revit
- Coordinate electrical designs with other building systems using Revit's collaboration tools
- Produce professional-quality drawings and technical deliverables that meet project requirements and industry standards

Revit Plumbing

Master the fundamentals of creating, designing, and managing plumbing systems in Revit with this comprehensive course. Through practical, hands-on training, participants will learn how to model, coordinate, and document plumbing systems effectively within a BIM environment.

- Get a foundational understanding of Revit's interface and tools specific to plumbing system design
- Set up and manage plumbing plan views to ensure clarity and accuracy in design presentations
- Model complete plumbing systems including domestic water and sanitary systems, with appropriate pipework, fittings, and pipe sizing
- Annotate plumbing systems and produce detailed documentation including schedules, layouts, and legends
- Coordinate plumbing systems with structural, architectural, and other MEP systems using Revit's advanced tools
- Troubleshoot design issues and prepare polished, professional-quality drawings and deliverables that meet project specifications and industry standards

CAD/BIM Capstone Project

In this course, students will bring together everything they've learned to complete a professional-grade project. Key skills include:

- Lead a full project workflow from initial concept to detailed documentation using CAD and BIM
- Integrate tools like AutoCAD and Revit in a unified, real-world project environment
- Refine project coordination methods, including collaboration and file management best practices
- Demonstrate professional-level drafting and modeling with detailed deliverables and annotations
- Apply design and construction documentation standards for residential or commercial projects
- Present a complete capstone project that showcases technical proficiency and design clarity

CAD/BIM Industry & Portfolio

Build the professional skills needed to launch a career in architecture, engineering, and construction. This course helps you refine your CAD and BIM projects, develop a standout portfolio, and prepare for the job market with confidence.

- Explore career opportunities available to professionals skilled in AutoCAD, Revit, and Civil 3D
- Learn what it's like to work in architecture, engineering, construction, and related industries
- Refine your CAD and BIM projects and compile them into a professional portfolio showcasing your drafting, modeling, and documentation skills
- Develop a polished resume and LinkedIn profile tailored to the AEC industry
- Get tips for standing out in job applications and interviews