COURSE SYLLABUS

Construction Management Certification Course Online

Master the full construction management lifecycle through hands-on training in scheduling, estimating, bidding, safety, and AI-powered workflows. Build real-world skills with Smartsheet, Bluebeam, Procore, and Autodesk Forma while learning from licensed architects, contractors, and industry veterans that help you prepare for the Procore and Bluebeam exams.

> Group classes (Live Online) and onsite training are available for this course. For more information, email partnerships@vdci.edu or visit: https://vdci.edu/courses/construction-management-certification



admissions@vdci.edu • (619) 758-9300

Course Outline

This package includes these courses

- Intro to Construction Management Course Online (20 Hours)
- Intermediate Construction Management Course Online (20 Hours)
- Autodesk Forma: Site Design & Building Design + Board Course Online (30 Hours)
- Construction Scheduling Course Online (30 Hours)
- Construction Materials Course Online (30 Hours)
- Intro to Construction Estimating Course Online (20 Hours)
- Construction Estimating with Bluebeam Course Online (30 Hours)
- Construction Management with Procore Course Online (Coming Soon) (30 Hours)
- Construction Bidding Course Online (30 Hours)
- Construction Site Planning & Logistics Course Online (Coming Soon) (30 Hours)
- AI Workflows for AEC Professionals Course Online (30 Hours)
- Construction Safety & OSHA Fundamentals Course Online (Coming Soon) (30 Hours)

Attend up to three (3) of these elective courses for free (all are optional).

- Commercial Blueprint Reading Course Online
- Residential Blueprint Reading Course Online
- MEP Blueprint Reading Course Online
- Structural Blueprint Reading Course Online
- Communication & Connection Course Online
- Self-Management Skills Course Online
- Teamwork, Collaboration & Leadership Course Online

Intro to Construction Management Course Online

This course offers a solid foundation in construction management, covering everything from project planning to completion. Ideal for aspiring professionals or those transitioning into the field, you'll learn key skills like scheduling, cost estimation, and effective communication with stakeholders. Through real-world examples and exercises, you'll gain practical experience in managing construction projects successfully. Topics include construction technology, reading construction documents, and contract administration. Whether you're new to the industry or moving into a management role, this course gives you the knowledge needed to succeed.

- Key principles of construction management and project organization
- Essentials of construction technology and how it applies to the industry
- How to interpret and analyze construction documents effectively
- Fundamentals of contract administration and legal requirements in construction
- Practical strategies for managing resources, schedules, and budgets
- Communication and leadership skills to manage teams and stakeholders
- Insight into industry best practices and real-world applications
- Overview of the key parties involved, industry sectors, design vs. construction
- Overview of the major project delivery systems, payment/procurement options, bonds, and insurance

Intermediate Construction Management Course Online

Take your construction management skills to the next level with this intermediate course. This course is designed for individuals with a foundational knowledge of construction management and aims to expand your expertise through practical applications and advanced concepts. You will learn how a construction project is managed from start to finish. Y ou'll learn about cost estimating and scheduling concepts, earthwork estimating, and contracts. Get a head start in the construction industry with these useful insights, tips, and terminology.

- Advanced project scheduling and resource allocation strategies.
- Budget estimation and cost control techniques.
- Risk assessment and management in construction projects.
- Effective communication and collaboration in multidisciplinary construction teams.
- Insights into regulatory compliance and contract administration.
- Overview of safety plans, quality plans, site logistics plans, phasing plans, and stormwater management plans.
- Overview of document control, submittals, RFIs, issue management, and jobsite records.

Autodesk Forma: Site Design & Building Design + Board Course Online

This course provides hands-on experience, guiding you from a blank project to a coordinated construction model. You will master efficient workflows for the modern jobsite, tackling everything from initial site massing to the detailed resolution of mechanical clashes. We will dive into practical projects, teaching you how to expertly handle digital files, version control, and automated coordination tools.

- Set up geographic project sites, import datasets, and establish site limits.
- Generate and compare design variations using site automation and sketch tools.
- Model commercial and mixed-use structures with columns, walls and interior rooms
- Design and assign custom facade components, window ratios and balcony modules.

- Evaluate proposals using sun hours, area metrics, earthwork and carbon analyses.

Construction Scheduling Course Online

Learn the essential skills to plan, organize, and manage construction projects effectively with Smartsheet. From understanding scheduling basics to creating detailed project timelines, this course provides experience using Smartsheet to build and maintain professional construction schedules.

- The fundamentals of creating construction schedules tailored to project requirements
- Techniques for utilizing scheduling software to streamline project timelines and workflows
- Strategies for identifying and managing critical paths to avoid delays and ensure timely completion
- Best practices for resource allocation and balancing workloads across project teams
- Methods for monitoring progress and updating schedules to adapt to changing project conditions
- Tips for communicating schedules with stakeholders and maintaining transparency throughout the project lifecycle

Construction Materials Course Online

The course provides a clear, practical overview of the materials and systems used in both residential and commercial construction, from concrete foundations through roofing systems. It covers how key construction materials are used, their properties, and sustainability considerations, giving you the knowledge needed to make informed decisions on construction projects.

- Understand the properties and uses of essential construction materials, including concrete, steel, wood, and more
- Explore the latest innovations in sustainable and green construction materials
- Learn how to evaluate and select the appropriate materials for various project requirements
- Gain practical knowledge on applying materials in both residential and commercial contexts
- Develop skills to assess material performance, durability, and cost-effectiveness
- Discover industry trends and best practices for using materials in modern construction projects

Intro to Construction Estimating Course Online

This course will show you the purpose of construction estimating, the tools used, and the skills required for construction estimating. You will go over quantity takeoffs and how to determine prices based on estimated quantities. The course wraps up discussing cost estimate proposals and what is included and excluded when creating an estimate.

- Understand the fundamentals of construction estimating for residential and commercial projects.
- Learn to interpret architectural and structural plans to extract relevant cost-related data.
- Master different types of estimates, such as conceptual, preliminary, and detailed estimating .
- Gain insight into quantity surveying, estimating takeoffs, labor costs, equipment costs, and contingency planning.
- Explore industry-standard tools and software used for creating precise cost estimations.
- Develop problem-solving skills to analyze discrepancies and mitigate cost overruns effectively.

Construction Estimating with Bluebeam Course Online

Learn how to perform accurate digital takeoffs and organize construction estimates in this class. Designed for contractors, estimators, and construction professionals, this course focuses on using Bluebeam Revu to generate quantity reports, streamline workflows, and prepare data for project proposals.

- Build a solid foundation in digital estimating by learning key concepts such as takeoffs, quantities, and bid preparation using Bluebeam Revu.
- Practice using Bluebeam's measurement, markup, and dynamic fill tools to calculate quantities across all building systems, including walls, windows, flooring, and roofing.
- Learn to manage data using tool chests, layers, spaces, and customizable columns. Export your takeoffs into shareable, editable reports for clients or team use.
- Apply your skills to real project drawings with structured exercises and assignments that mirror professional estimating workflows.

Construction Management with Procore Course Online (Coming Soon)

Learn Procore, the industry's leading construction management software, and prepare for the Procore Student Certification Exam. Procore is a comprehensive construction management platform designed to streamline and simplify every aspect of a construction project.

- Learn how to utilize the full capabilities of Procore software to manage construction projects seamlessly
- Gain strategies to improve collaboration between office and field teams for clarity and efficiency
- Learn the best practices for communication and task management
- Apply techniques for tackling challenges across all project phases
- Discover how to streamline processes, minimize delays, and reduce rework, ensuring every task aligns with project goals

Construction Bidding Course Online

Landing projects in construction takes much more than tallying up costs. It calls for clear thinking, smart decisions, and a steady process that carries you from the first look at an opportunity all the way to the final handoff. This course breaks down how estimators move through each phase of the bidding cycle, including how to size up which jobs are worth pursuing, how to stack subcontractor pricing side by side, and how to arrive at a number that wins the work while keeping risk in check.

- Get a clear picture of what estimators actually do and how bidding shapes the rest of the project
- Size up potential jobs by looking at contract structure, the competitive landscape, backlog, and risk
- Assemble a trusted subcontractor pool that brings in strong, thorough pricing across all scopes
- Review incoming bids by matching up scope, spotting what's missing, and standing behind your selections
- Piece together a full bid that blends general conditions, fee strategy, and a smart contingency cushion
- Work through the intensity of bid day and turn in a sharp, competitive, and above-board proposal

Construction Site Planning & Logistics Course Online (Coming Soon)

A productive jobsite takes more than hard work. It depends on having a clear plan for how people, materials, and equipment move through the space each day. This course walks through how field teams handle site logistics from the opening walkthrough to project closeout, including how to read a site, put together a workable plan, run daily operations, and adapt when conditions shift on the ground.

- See what site logistics really involves in construction and why it drives safety, productivity, and overall project outcomes
- Assess a site's physical limits, entry and exit points, and existing conditions before any planning gets underway
- Craft a realistic logistics plan that addresses fencing, circulation paths, staging zones, and temporary facilities
- Direct the movement of labor, materials, and equipment in a way that cuts down on congestion and keeps work flowing
- Run daily field operations with an eye toward safety, cleanliness, and well-defined work zones

- Tailor logistics planning to each project phase and reshape the strategy as site conditions evolve

AI Workflows for AEC Professionals Course Online

This course examines how artificial intelligence is being applied across the built environment, from early design through construction and project closeout. Students will gain practical, hands-on experience developing automation scripts and tools built around the real demands of AEC practice.

- Use sophisticated prompting and scripting methods to extract and process information from AEC project documents and data.
- Build and oversee automated processes using Python and AI APIs within the context of a professional firm.
- Leverage generative and iterative AI tools to model and develop project criteria throughout the construction lifecycle.
- Create industry-ready automation tools that support bidding, technical proposal writing, and project management.
- Design and deploy custom interfaces built for practical, firm-wide use in a professional setting.
- Apply AI tools to clean, process, and analyze complex project data across a range of file formats and document types.
- Develop AI-powered tools for managing project schedules, analyzing field reports, and tracking budgets in real time.
- Complete a polished, portfolio-ready web application that showcases applied competency in AEC automation and AI-driven workflows.

Construction Safety & OSHA Fundamentals Course Online (Coming Soon)

Master the essentials of construction safety, from PPE and fall protection to hazard analysis and OSHA referencing. Build the knowledge to make informed safety decisions on real construction sites and prepare for OSHA 10 certification.

- Understand the general requirements and common dangers of the construction industry
- Identify personal protective equipment (PPE) and know when each type is required
- Apply activity-specific safety protocols for fall protection, welding, confined spaces, and electrical work
- Recognize and interpret hazardous material symbols commonly found on construction sites
- Complete an Activity Hazard Analysis (AHA) for a given construction task
- Navigate OSHA resources and reference standards for real-world scenarios
- Conduct a basic safety inspection, including exit routes, signage, and fire plans
- Evaluate weather-related safety considerations for both heat and cold conditions