

Commercial Construction Technology - Courses

CON 120 —Construction Safety / Construction Drawings (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will apply OSHA safety standards and demonstrate proper use of personal protective equipment in commercial construction settings. They will analyze potential job site hazards and evaluate safety procedures. Students will also interpret construction drawings, identify symbols and notations, and apply drawing conventions to real-world building scenarios.

CON 122 —Building Envelope (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will learn layout and construction techniques for various foundation types and floor systems in commercial buildings. They will analyze soil conditions, load paths, and framing materials to evaluate structural integrity and code compliance. Hands-on labs reinforce plan interpretation and proper installation methods. The course also covers framing of load-bearing and non-load-bearing walls. Students will interpret framing plans, apply tools and materials, and assess wall systems for accuracy, safety, and compliance with building codes.

CON 124 —Surveying for Technicians (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will apply surveying techniques using levels, theodolites, and total stations to measure and map construction sites. They will analyze field data, interpret topographic maps, and evaluate site layout accuracy for commercial projects. Field exercises reinforce the ability to demonstrate precision and proper documentation.

CON 126 —Project Scheduling/Time Management (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

This course introduces students to essential tools and strategies for planning and managing construction projects. Students will develop project schedules, allocate resources, and monitor progress using industry-standard methods and software. Emphasis is placed on understanding critical path techniques, time management, and coordinating tasks within a team environment.

CON 128 —Roofing Methods (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will develop framing skills to construct a variety of commercial roof systems, including gable, hip, and flat roofs. They will analyze roof loads, truss configurations, and weatherproofing strategies, evaluating installations for quality, safety, and code compliance. Hands-on labs emphasize safe practices when working at heights and interpreting roof framing plans. The course also covers metal roofing systems such as

standing seam and corrugated panels, with a focus on proper installation techniques, ventilation solutions, and adherence to manufacturer guidelines. Sustainable roofing practices are integrated throughout, encouraging the use of energy-efficient materials, environmentally responsible construction methods, and long-term durability in line with green building standards.

CON 130 —Construction Methods (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will develop skills in framing preparation, flashing, sealing, and alignment techniques for the installation of windows and doors in commercial construction. They will evaluate various window and door systems, hardware components, and common installation challenges to ensure optimal energy efficiency and weather resistance. Emphasis is placed on interpreting manufacturer specifications, applying industry standards, and ensuring code compliance through quality workmanship. In addition, students will gain hands-on experience with insulation and drywall installation using a range of materials and tools. They will assess thermal and acoustic performance, apply energy code requirements, and evaluate finish quality. Throughout the course, students will demonstrate safe work practices and professional standards. Sustainable construction principles are embedded throughout, encouraging environmentally responsible material choices and energy-conscious installation methods.

CON 132 —Construction Codes and Contracts (Credits: 3 Lecture: 3 Lab: 0 Applied Lab: 0)

Students will analyze local, state, and national building codes and evaluate their impact on commercial construction. They will interpret zoning laws, permits, ADA regulations, inspection procedures, and apply knowledge of construction contracts, including legal responsibilities and ethical considerations. Emphasis is placed on understanding how codes and contracts influence project planning and execution.

CON 134 —Construction Business Principles (Credits: 3 Lecture: 3 Lab: 0 Applied Lab: 0)

This course provides an overview of the foundational concepts involved in running a construction-related business. Topics include budgeting, estimating, contracts, business structures, and basic accounting. Students will explore legal responsibilities, regulatory requirements, and strategies for customer relations, marketing, and workforce coordination. Teamwork, communication, and leadership are emphasized throughout. This course complements Project Scheduling and Time Management by focusing on the business and administrative aspects that support effective project execution.

CON 136 —Summer Internship (Credits: 4 Lecture: 0 Lab: 0 Applied Lab: 0)

Students will apply classroom knowledge and hands-on skills in real-world commercial construction environments. They will demonstrate professionalism, safety awareness, and teamwork while working with licensed contractors or construction firms. Students will analyze their daily tasks, evaluate their performance, and reflect on their learning through a final report and faculty-guided review.

CON 201 —Finish Flooring (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will apply installation techniques for a variety of finish flooring materials used in commercial buildings, including hardwood, tile, and polished concrete. They will analyze subfloor conditions, interpret layout plans, and evaluate material performance and finish quality. Emphasis is placed on demonstrating precision, safety, and adherence to manufacturer specifications. In alignment with green building standards, students will assess flooring materials for sustainability, environmental impact, and life-cycle performance. The course encourages the use of eco-friendly products and responsible installation practices that support energy efficiency and indoor air quality.

CON 202 —Structural Steel Design and Connections (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will apply principles of structural steel framing and demonstrate proper connection methods used in commercial construction. They will analyze steel components, interpret structural drawings, and evaluate bolted and welded connections for strength and code compliance. The course emphasizes safety, precision, and integration with other building systems.

CON 204 —Construction Materials (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

This advanced course builds on foundational knowledge of construction materials, focusing on their properties, applications, and performance in commercial projects. Students will evaluate structural and finishing materials—including wood, concrete, steel, masonry, and composites—for durability, sustainability, and code compliance. Emphasis is placed on material selection based on environmental conditions, cost, and project requirements. In alignment with green building standards, students will assess materials for environmental impact, recyclability, and energy efficiency. They will interpret technical specifications, analyze material compatibility, and apply quality control practices in hands-on lab settings, with a focus on supporting sustainable construction outcomes.

CON 206 —Construction Estimating & Quantity Takeoffs (Credits: 3 Lecture: 3 Lab: 0 Applied Lab: 0)

Students will apply industry-standard estimating techniques to calculate material, labor, and equipment costs for commercial construction projects. They will interpret construction drawings, analyze project scopes, and evaluate cost data using professional software tools. Emphasis is placed on accuracy, cost-effectiveness, and understanding how estimates influence project planning and execution. In alignment with green building standards, students will also consider sustainable material options, energy-efficient systems, and waste reduction strategies in their estimates. The course encourages environmentally responsible decision-making by integrating life-cycle cost analysis and sustainable construction practices into the estimating process.

CON 208 —Construction Management (Credits: 3 Lecture: 3 Lab: 0 Applied Lab: 0)

Students will apply project management principles to coordinate construction activities in commercial settings. They will analyze schedules, budgets, and resource plans, and evaluate project progress using tools such as Gantt charts and critical path methods. Students will also demonstrate leadership, communication, and documentation skills essential for managing construction teams.

CON 210 —Mechanical and Electrical Systems (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will apply knowledge of HVAC, plumbing, and electrical systems in commercial buildings. They will interpret MEP drawings, analyze system layouts and performance, and evaluate installations for energy efficiency and code compliance. Emphasis is placed on demonstrating integration of mechanical and electrical systems within the building envelope.

CON 212 —Commercial Concrete (Credits: 3 Lecture: 2 Lab: 0 Applied Lab: 1)

Students will focus on the principles and practices of commercial concrete construction. Students will apply techniques for form work, reinforcement placement, concrete mixing, pouring, and finishing in commercial settings. They will analyze concrete properties, curing methods, and structural performance, while interpreting construction drawings and specifications. Emphasis is placed on safety, quality control, and compliance with building codes. Aligned with green building standards, the course integrates sustainable practices such as the use of recycled aggregates, low-carbon concrete mixes, and efficient water usage. Students will evaluate environmental impacts, explore innovative concrete technologies, and apply decision-making strategies that support long-term sustainability in commercial construction.