

STRANDS AND STANDARDS

CONSTRUCTION CAPSTONE



Course Description

This course offers hands-on experience in managing real-world construction projects relevant to a student’s previous program training (electrical, plumbing, carpentry, masonry, etc.). Students will develop comprehensive project proposals, allocate resources, and create project schedules using management tools and techniques. They ensure compliance with relevant codes, and select appropriate materials while learning various construction methods and safety protocols. The course emphasizes teamwork, professional communication, and industry engagement through mentorship and real-world applications. By the end of the course, students will be equipped with the skills and knowledge necessary to pursue further education or careers in the construction industry, having gained practical experience and professional insights.

Intended Grade Level	11-12
Units of Credit	0.5
Core Code	40.08.00.00.403
Concurrent Enrollment Core Code	N/A
Prerequisite	N/A
Skill Certification Test Number	N/A
Skill Certification Cut Score	N/A
Test Weight	N/A
License Area of Concentration	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Plumbing
Endorsement 2	Electrician
Endorsement 3	Residential Construction (Construction Management/Carpentry)

STRAND 1: PROJECT PLANNING & MANAGEMENT

Students will collaboratively plan and manage an approved construction project relevant to their previous program training (electrical, plumbing, carpentry, HVAC, masonry, etc.). This project may be sourced by industry partners, school programs, or the instructor.

Standard 1

Investigate key elements of a successful project proposal and planning for construction.

- Objectives
- Scope
- Timeline
- Budget

Standard 2

Assess and select critical resources needed to complete the approved construction project.

- Personnel
- Materials
- Vendors
- Time
- Funding
- Site or location

Standard 3

Explore methods for allocating resources effectively during the project.

- Scheduling software or tools
- Team roles and responsibilities
- Communication plans
- Deadlines

Performance Skills

- Create a detailed project proposal for a construction-related project. Present it to an outside industry professional for feedback.
- Develop a Gantt chart or similar project schedule and adjust it based on project needs and constraints.
- Participate in team meetings, document project progress, and resolve conflicts effectively.

STRAND 2: MATERIALS, TECHNIQUES, & METHODS

Students will collaboratively complete and present an approved construction project relevant to their previous program training (electrical, plumbing, carpentry, HVAC, masonry, etc.). This project may be sourced by industry partners, school programs, or the instructor.

Standard 1

Identify an appropriate blueprint for the industry-related construction project.

Standard 2

Select appropriate construction materials needed for the project.

Standard 3

Explain the construction methods and processes required to complete the project.

Standard 4

Describe safety considerations and concerns associated with the construction site and project.

- Workplace conditions
- Potential hazards
- Safety standards
- Equipment use
- Personal Protective Equipment (PPE)

Performance Skills

- Research local, state, and federal building codes and regulations; confirm the approved blueprint and plans are in compliance.
- Create a comprehensive materials list and estimated cost.
- Develop a safety plan for the approved construction-related project.
- Demonstrate proficiency in relevant construction methods.
- Pass relevant safety test(s) with 100% accuracy.
- Demonstrate safety practices and procedures based on regulations and requirements when working on a site or constructing a project.
- Complete the approved construction-related project.
- Present the completed project to an industry professional and peers.

STRAND 3: CTSOs & DURABLE SKILLS

Students will be encouraged to participate in a relevant CTSO (Career & Technical Student Organization) through the demonstration of construction workplace and career readiness skills. These standards will not appear on state skill certification exams, but should be taught throughout the duration of the course.

Standard 1

Students will display personal skills related to the essential values, personality traits, and personal characteristics for success in the construction profession and life.

- **Integrity** - demonstrate honesty and personal responsibility for actions.
- **Work ethic** - demonstrate tenacity, hard work, excellence, punctuality, meet deadlines; and be self-directed when completing tasks in the construction professional setting.
- **Professionalism** - demonstrate maturity, self-confidence; and a positive image when working with teammates or clients on construction projects.
- **Responsibility** - demonstrate dependability, consistency, and personal well-being when safely completing construction tasks.
- **Adaptability/Flexibility** - Foster creativity, new ideas, and resilience when working to solve problems in construction projects.
- **Self-motivated** - demonstrate a willingness to learn, independence, initiative, and a positive attitude when approaching new information

Standard 2

Students will display workplace skills related to the essential attitudes and abilities for success in the construction profession.

- **Communication** – Demonstrates skills in listening and speaking; communicates professionally with teammates, supervisors, and customers in relation to construction projects.
- **Decision making** – Analyzes key facts, data, and situations to employ reasoning skills for completing construction tasks.
- **Teamwork** – Builds trusting relationships, works cooperatively with others and utilizes individual strengths of team members when completing construction tasks.
- **Planning, organizing, and management** – Designs, prepares, and implements creative tasks within a desired timeframe; Sets priorities and responds to changing priorities.
- **Leadership** – Builds positive relationships and mitigates conflict.

Standard 3

Students will display technical skills that are grounded in design that deliver essential knowledge and competencies for success in the industry.

- **Computer and technology literacy**
- **Job specific skills**
- **Safety and health**
- **Service orientation** – responds to internal and external customers; demonstrates focus and presence; attends to personal matters away from the classroom.
- **Professional development** – demonstrates openness to learn, grow, and change in the construction industry.