

# Construction Technology

## COURSE OUTLINE

**1. Course Title: Construction Co-op**

**2. CBEDS Title: Construction Co-op**

**3. CBEDS Number:**

**4. Job Titles:**

Framers

Contractors

Plumbers

Civil Engineers

Surveyors

Construction Inspectors

Architects

Engineers

Landscape Architects

Facilities Managers

**5. Course Description:**

This Cooperative Vocational Education (CVE) course provides students a combination of related classroom instruction and paid or unpaid instruction in a construction/trades industry setting. The importance of on-the-job training as a highly effective means of developing solid job skills has long been recognized. Students participate in CVE internships that take place at construction/trade sites while they receive related instruction at school. The purpose of this course is to expand occupational training opportunities by utilizing existing sites and facilities other than those of the traditional classroom.

The Construction Coop course provides the opportunity for construction industry professionals and educators to work together to provide eligible students with on-the-job training and relevant instruction for them to enter the workforce trained and prepared to become high quality employees. This course also provides a foundation of basic skills and experiences designed for access to registered apprenticeship programs at the local, state, and national levels.

Integrated throughout the course are career preparation standards that include necessary communication, interpersonal, and problem-solving skills to seek and keep a job. Students are placed in internships at local businesses and industries in paid and/or non-paid positions.

**Student Outcomes & Objectives:**

In this course students will:

- Demonstrate proper safety procedures and practices for equipment
- Demonstrate knowledge and understanding of handling hazardous materials
- Describe employee accident procedures
- Demonstrate and interpret material Safety Data Sheets in shop and work environments
- Describe the evolution of modern-day apprenticeship
- Describe the responsibilities of an apprentice
- Describe the importance of successful labor-management relationships
- Identify apprenticeable occupations

- Research prospective employers and occupations
- Develop a career path demonstrating upward mobility in an apprenticeable occupation
- Identify technical manuals used in the construction trades occupations
- Apply basic skills and knowledge to a real-world setting
- Develop transferable academic, technical and employability skills
- Develop and apply communication skills by interacting with workers
- Assume real responsibilities in a work setting
- Focus a career interest through an in-depth industry experience

## Pathway

Recommended Sequence	Courses	
	Engineering	Construction
<b>Introductory</b>	Computer Foundations	Applied Technology
<b>Skill Building</b>	Computer Aided Design	Construction Technology
<b>Advanced Skill</b>	Adv. Computer Aided Design or <b>Construction Co-op</b>	Adv. Construction Technology or <b>Construction Co-op</b>

**6. Hours:** *Students receive up to 76 hours of classroom instruction and up to 360 hours of workplace experience.*

**7. Prerequisites:** Advanced Construction Technology or Advanced Computer Aided Design

**8. Date (of creation/revision):** July 2011

## 9. . Course Outline

<b>COURSE OUTLINE</b>				
Upon successful completion of this course, students will be able to demonstrate the following skills necessary for entry-level employment.				
<b>Instructional Units and Competencies</b> Guaranteed curriculum = regular font Negotiated curriculum = italicized	<b>Course Hours</b>	<b>Model Curr. Standards</b>	<b>CA Academic Content Standards</b>	<b>CAHSEE</b>
<b>I. CAREER PREPARATION</b> <b>A. Career Planning and Management.</b> 1. Know the personal qualifications, interests, aptitudes, knowledge, and skills necessary to succeed in careers. a. Students will identify skills needed for job success b. Students will identify the education and experience required for moving along a career ladder. 2. Understand the scope of career opportunities and know the requirements for education, training, and licensure. a. Students will describe how to find a job. b. Students will select two jobs in the field and map out a timeline for completing education and/or licensing requirements. 3. Know the main strategies for self-promotion in the hiring process, such as completing job applications, resume writing, interviewing skills, and preparing a portfolio. a. Students will write and use word processing software to create a resume, cover letters, thank you letters, and job applications. b. Students will participate in mock job interviews. 4. <i>Develop a career plan that is designed to reflect career interests, pathways, and postsecondary options.</i> a. <i>Students will conduct a self—assessment and explain how professional qualifications affect career choices.</i> 5. <i>Understand the role and function of professional organizations, industry associations, and organized labor in a productive society.</i> a. <i>Contact two professional organization and identify the steps to become a member.</i> 6. <i>Understand the past, present and future trends that affect careers, such as technological developments and societal trends, and the resulting need for lifelong learning.</i> a. <i>Students will describe careers in the business industry sector.</i> b. <i>Students will identify work-related cultural differences to prepare for a global workplace.</i> <b>B. Technology.</b> 1. Understand past, present and future technological advances as they relate to a chosen pathway and on selected segments of the economy. 2. Understand the use of technological resources to gain access to, manipulate, and produce information, products and services. 3. Use appropriate technology in the chosen career pathway. <b>C. Problem solving and Critical Thinking.</b> 1. Understand the systematic problem-solving models that incorporate input, process, outcome and feedback components, and apply appropriate problem-solving strategies and critical thinking to work-related issues and tasks.	20  Additional hours are integrated throughout the course.	Finance & Business Industry Sector, Model Curriculum Standards  3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0	<u>Language Arts</u> (8) R 1.3, 2.6 W1.3, 2.5, LC 1.4,1.5 1.6 LS1.2, 1.3, (9/10) R2.1,2.3,2 W2.5 LC1.4 LS 1.1, 2.3 (11/12) R2.3 W2.5 LC1.2 <u>Math</u> (7) NS1.2, 1.7 MR 1.1,1.3 2.7,2.8, 3.1	Lang. Arts R 8.2.1  (9/10) R 2.1, 2.3 W2.5  Math (7) NS 1.2, 1.3, 1.7 MR 1.1, 2.1, 3.1

<p>2. Use and apply critical thinking and decision making skills to make informed decisions, solve problems, and achieve balance in the multiple roles of personal, home, work and community life.</p> <p>D. Health and Safety.</p> <ol style="list-style-type: none"> <li>1. Know policies, procedures, and regulations regarding health and safety in the workplace, including employers' and employees' responsibilities.</li> <li>2. Understand critical elements of health and safety practices related to a variety of business environments.</li> </ol> <p>E. Responsibility &amp; Flexibility.</p> <ol style="list-style-type: none"> <li>1. Understand the qualities and behaviors that constitute a positive and professional work demeanor.</li> <li>2. Understand the importance of accountability and responsibility in fulfilling personal, community, and workplace roles and how individual actions can affect the larger community.</li> <li>3. Understand the need to adapt to varied roles and responsibilities.</li> </ol> <p>F. Ethics and Legal Responsibilities</p> <ol style="list-style-type: none"> <li>1. Know the major local, district, state, and federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.</li> <li>2. Understand the concept and application of ethical and legal behavior consistent with workplace standards. <ol style="list-style-type: none"> <li>a. <i>Contact a business and obtain a copy of their rules for employment.</i></li> <li>b. <i>Role play difference ethical scenarios.</i></li> </ol> </li> <li>3. Understand the role of personal integrity and ethical behavior in the workplace.</li> </ol> <p>G. Leadership and Teamwork.</p> <ol style="list-style-type: none"> <li>1. Understand the characteristics and benefits of teamwork, leadership, citizenship in the school, community, and workplace settings for effective performance and attainment of goals.</li> <li>2. Understand the ways in which professional associations, and competitive career development activities enhance academic skills, career choices, and contribute to promote employability.</li> <li>4. Know multiple approaches to personal conflict resolution and understand how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.</li> </ol>				
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Instructional Units and Competencies	Hours	Model Curr. Standards.	CA Academic Standards	CAHSEE
<p>A. Orientation &amp; Required Forms &amp; Procedures</p> <ol style="list-style-type: none"> <li>1. Wage and Hour Report</li> <li>2. Training Agreement</li> <li>3. Evaluation Form</li> </ol>	2		<b>Academic</b> M 1.2, M1..3; R2..3; W1.4;	<b>ELA:</b> R2.1, R2.7, R2.8; WS1.2, WS1.5; <b>Math:</b> NS1.2, NS1.3
<p>B. Safety</p> <ol style="list-style-type: none"> <li>1. Proper procedures and practices for equipment</li> <li>2. Handling hazardous materials</li> <li>3. Accident procedures</li> <li>4. Safety Data sheets</li> </ol>	10	Bldg. Trades Construction Industry Sec. C2.1, 2.2; C3.0; C5.0; D2.1, 2.2; D3.0; D5.0	<b>Academic</b> R2..3; W2.2 (1..3, 1.6), 2.5; LS 2.4 (2.2, 2.4)	<b>ELA:</b> R2.1, R2.7, R2.8; WS1.2, WS1.5
<p>C. Apprenticeships</p> <ol style="list-style-type: none"> <li>1. Evolution</li> <li>2. Responsibilities</li> <li>3. Occupations</li> <li>4. Career pathways</li> <li>5. Labor-management relationships</li> </ol>	5	Fdn. Stds. 9.2, 9.4, 9.5, 9.6, 10.0, 10.11	<b>Academic</b> R2.1, R2..3; W1.4; LS 1.5, 1.6, 1.7, 2.5, 2.2	<b>ELA:</b> R2.1, R2.7, R2.8; WS1.2, WS1.5
<p>D. Research</p> <ol style="list-style-type: none"> <li>1. Prospective employers and occupations</li> <li>2. Technical manuals used in the construction trades</li> <li>3. Career paths in the trades occupations</li> </ol>	5	Fdn. Stds. 10.8; 10.9,	<b>Academic</b> R2.1, R2..3; W1.4; LS 1.5, 1.6, 1.7, 2.5, 2.2	<b>ELA:</b> R2.1, R2.7, R2.8; WS1.2, WS1.5
<p>E. In-depth Industry Experience</p> <ol style="list-style-type: none"> <li>1. Apply basic skills and knowledge</li> <li>2. Assume real responsibilities in a work setting</li> <li>3. Focus a career interest</li> <li>4. Develop transferable academic, technical and employability skills</li> <li>5. Apply knowledge of green building guidelines, methods and materials learned in prerequisite Construction Technology courses.</li> </ol>	Min. of 144 hrs.	Fdn. Stds. 7.0, 8.0, 10.0, 11.0		

10. Additional recommended/optional items

- a. Articulation: None
- b. Academic credit: None
- c. Instructional strategies:

**Assignments:**

Coop

**Methods of Evaluation:**

The types of writing assignments required:

Interview an industry representative  
Research Construction Projects

The problem-solving assignments required:

Class activities  
Quizzes  
Exams

The types of skill demonstrations required:

Class performances  
Projects to match skills

The types of objective exams used in the course:

Multiple choice, True/False, Essay  
Project based  
Demonstration

Required paperwork:

Weekly time sheets  
Training Agreement  
Performance Evaluation

- d. Instructional materials:

Teacher generated materials and projects provided by industry partners

- e. Certificates: None