

Course Outline

Building and Construction Trades

REVISED: August/2020

Job Title

Construction Worker

Career Pathway:

Residential and Commercial Construction

Industry Sector:

Building and Construction Trades

O*NET-SOC CODE:

47-2061.00

CBEDS Title:

Introduction to Building and Construction Trades

CBEDS No.:

5501

71-35-70

Construction Work/3

Credits: 15

Hours: 180

Course Description:

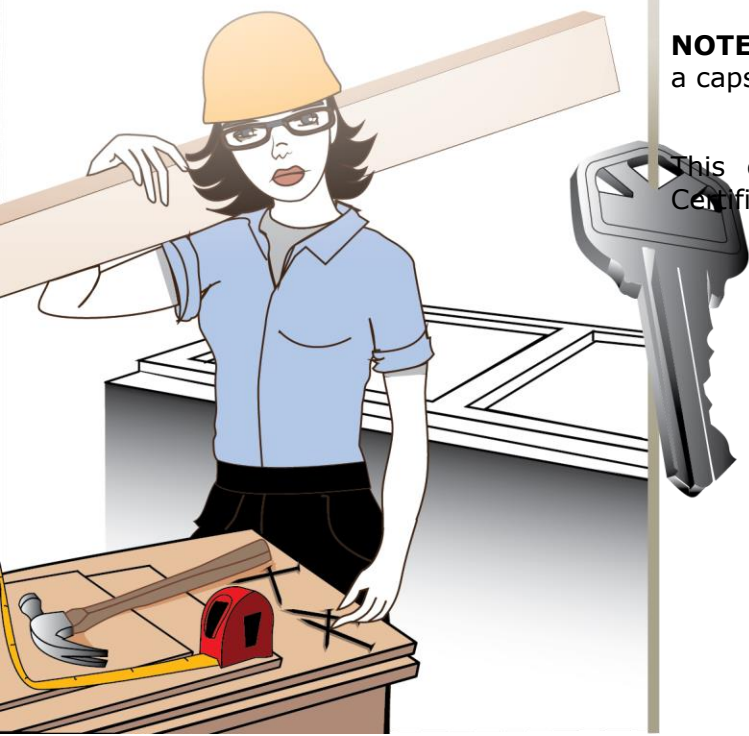
This competency-based course is the third in a sequence of three designed for construction work. It provides students with technical instruction and practical experience in basic residential and commercial construction using sustainable and green technology. Instruction includes an introduction, workplace safety, and reviews of resource management, trade mathematics, employability skills, and apprenticeship preparation. Emphasis is placed on the techniques, tools, and materials required for finish carpentry, advanced plumbing and electrical work, roofing, and painting. The competencies in this course are aligned with the California High School Academic Content Standards and the California Career Technical Education Model Curriculum Standards.

Prerequisites:

Enrollment requires successful completion of the Construction Work/2 (71-35-60) course.

NOTE: For Perkins purposes this course has been designated as a capstone course.

This course cannot be repeated once a student receives a Certificate of Completion.



COURSE OUTLINE COMPETENCY-BASED COMPONENTS

A course outline reflects the essential intent and content of the course described. Acceptable course outlines have six components. (Education Code Section 52506). Course outlines for all apportionment classes, including those in jails, state hospitals, and convalescent hospitals, contain the six required elements:

(EC 52504; 5CCR 10508 [b]; Adult Education Handbook for California [1977], Section 100)

COURSE OUTLINE COMPONENTS

LOCATION

GOALS AND PURPOSES

Cover

The educational goals or purposes of every course are clearly stated, and the class periods are devoted to instruction. The course should be broad enough in scope and should have sufficient educational worth to justify the expenditure of public funds.

The goals and purpose of a course are stated in the COURSE DESCRIPTION. Course descriptions state the major emphasis and content of a course and are written to be understandable by a prospective student.

PERFORMANCE OBJECTIVES OR COMPETENCIES

pp. 7-14

Objectives should be delineated and described in terms of measurable results for the student and include the possible ways in which the objectives contribute to the student's acquisition of skills and competencies.

Performance Objectives are sequentially listed in the COMPETENCY-BASED COMPONENTS section of the course outline. Competency Areas are units of instruction based on related competencies. Competency Statements are competency area goals that together define the framework and purpose of a course. Competencies fall on a continuum between goals and performance objectives and denote the outcome of instruction.

Competency-based instruction tells a student before instruction what skills or knowledge they will demonstrate after instruction. Competency-based education provides instruction which enables each student to attain individual goals as measured against pre-stated standards.

Competency-based instruction provides immediate and continual repetition and in competency-based education the curriculum, instruction, and assessment share common characteristics based on clearly stated competencies. Curriculum, instruction, and assessment in competency-based education are explicit, known, agreed upon, integrated, performance oriented, and adaptive.

COURSE OUTLINE COMPETENCY-BASED COMPONENTS
(continued)

COURSE OUTLINE COMPONENTS

LOCATION

INSTRUCTIONAL STRATEGIES

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Instructional techniques or methods could include laboratory techniques, lecture method, small-group discussion, grouping plans, and other strategies used in the classroom.

Instructional strategies for this course are listed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructional strategies and activities for a course should be selected so that the overall teaching approach takes into account the instructional standards of a particular program, i.e., English as a Second Language, Programs for Adults with Disabilities.

UNITS OF STUDY, WITH APPROXIMATE HOURS ALLOTTED FOR EACH UNIT

Cover

The approximate time devoted to each instructional unit within the course, as well as the total hours for the course, is indicated. The time in class is consistent with the needs of the student, and the length of the class should be that it ensures the student will learn at an optimum level.

pp. 7-14

Units of study, with approximate hours allotted for each unit are listed in the COMPETENCY AREA STATEMENT(S) of the course outline. The total hours of the course, including work-based learning hours (community classroom and cooperative vocational education) is listed on the cover of every CBE course outline. Each Competency Area listed within a CBE outline is assigned hours of instruction per unit.

EVALUATION PROCEDURES

p. 16

The evaluation describes measurable evaluation criteria clearly within the reach of the student. The evaluation indicates anticipated improvement in performances as well as anticipated skills and competencies to be achieved.

Evaluation procedures are detailed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructors monitor students' progress on a continuing basis, assessing students on attainment of objectives identified in the course outline through a variety of formal and informal tests (applied performance procedures, observations, and simulations), paper and pencil exams, and standardized tests.

REPETITION POLICY THAT PREVENTS PERPETUATION OF STUDENT ENROLLMENT

Cover

After a student has completed all the objectives of the course, he or she should not be allowed to reenroll in the course. There is, therefore, a need for a statement about the conditions for possible repetition of a course to prevent perpetuation of students in a particular program for an indefinite period of time.

ACKNOWLEDGMENTS

Thanks to PAUL PIDOUX and MARCELA BAKER for developing and editing this curriculum. Acknowledgment is also given to ERICA ROSARIO for designing the original artwork for the course covers.

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CALIFORNIA CAREER TECHNICAL EDUCATION MODEL CURRICULUM STANDARDS

Building and Construction Trades Industry Sector

Knowledge and Performance Anchor Standards

1.0 Academics

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Building and Construction Trades academic alignment matrix for identification of standards.

2.0 Communications

Acquire and accurately use Building and Construction Trades sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.

3.0 Career Planning and Management

Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.

4.0 Technology

Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Building and Construction Trades sector workplace environment.

5.0 Problem Solving and Critical Thinking

Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Building and Construction Trades sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.

6.0 Health and Safety

Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Building and Construction Trades sector workplace environment.

7.0 Responsibility and Flexibility

Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Building and Construction Trades sector workplace environment and community settings.

8.0 Ethics and Legal Responsibilities

Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.

9.0 Leadership and Teamwork

Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the SkillsUSA career technical student organization.

10.0 Technical Knowledge and Skills

Apply essential technical knowledge and skills common to all pathways in the Building and Construction Trades sector, following procedures when carrying out experiments or performing technical tasks.

11.0 Demonstration and Application

Demonstrate and apply the knowledge and skills contained in the Building and Construction Trades anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and through the SkillsUSA career technical student organizations.

Building and Construction Trades Pathway Standards

D. Residential and Commercial Construction Pathway

The Residential and Commercial Construction pathway provides learning opportunities for students interested in preparing for careers in construction and building design, performance, and sustainability. The standards focus on the manner in which residential and commercial structures are designed and built. The pathway includes instruction in the way in which these structures are built (Class B California License).

Sample occupations associated with this pathway:

- ◆ Plumber
- ◆ Electrician
- ◆ Building Inspector
- ◆ Estimator
- ◆ Carpenter

- D1.0 Recognize the impact of financial, technical, environmental, and labor trends on the past and future of the construction industry.
- D2.0 Apply the appropriate mathematical calculations used in the construction trades.
- D3.0 Interpret and apply information from technical drawings, schedules, and specifications used in the construction trades.
- D4.0 Demonstrate techniques for proper site preparation.
- D5.0 Demonstrate foundation layout techniques to include setting forms, placing reinforcements, and placing concrete according to construction drawings, specifications, and building codes.
- D6.0 Demonstrate carpentry techniques for the construction of a single-family residence.
- D7.0 Demonstrate proper installation techniques of interior finish materials and protective finishes.
- D8.0 Demonstrate the application of exterior finish materials and protective finishes in building construction.
- D9.0 Understand, integrate, and employ sustainable construction practices in the building trades.
- D10.0 Demonstrate skills necessary to complete a plumbing system in a single-family residence in accordance with accepted industry standards.
- D11.0 Demonstrate skills necessary to complete an electrical system in a single-family residence in accordance with accepted industry standards.

CBE
Competency-Based Education

COMPETENCY-BASED COMPONENTS
for the Construction Work/3 Course

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>A. INTRODUCTION AND SAFETY</p> <p>Review, apply, and evaluate classroom and workplace policies and procedures used in accordance with federal, state, and local safety and environmental regulations.</p>	<ol style="list-style-type: none"> 1. Review the scope and purpose of the course. 2. Review the overall course content as a part of the Linked Learning Initiative. 3. Review classroom policies and procedures. 4. Review classroom and workplace first aid and emergency procedures. 5. Review the different occupations in the Building and Construction Trades Industry Sector which have an impact on the role of the construction workers. 6. Review the opportunities available for promoting gender equity and the representation of non-traditional populations in construction work. 7. Review the impact of Environmental Protection Agency (EPA) legislation on the Building and Construction Trades Industry Sector practices. 8. Review and demonstrate the procedures for contacting proper authorities for the removal of hazardous materials based on the EPA standards. 9. Review and demonstrate the use of the Material Safety Data Sheet (MSDS) as it applies to the construction industry. 10. Review the role of the Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ in increasing the use of sustainable and green building practices in California. 11. Review the City of Los Angeles Building and Safety Codes and their applications to the construction industry. 12. Review the provisions of the California Title 24 Energy Efficiency Standards (a.k.a. 2008 California Green Building Standards Code) as they relate to the Building and Construction Trades Industry Sector. 13. Review the purpose of the California Occupational Safety and Health Administration (Cal/OSHA) and its laws governing construction workers. 14. Review how each of the following insures a safe workplace: <ol style="list-style-type: none"> a. employees' rights as they apply to job safety b. employees' obligations as they apply to safety c. role of the Division of Workers' Compensation (DWC) d. safety requirements in buildings during construction e. safe use of scaffolding and ladder requirements 	<p>Career Ready Practice: 1, 5, 7, 12</p> <p>CTE Anchor: Communications: 2.1, 2.2, 2.3 Problem Solving and Critical Thinking: 5.1, 5.4 Health and Safety: 6.1, 6.2, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.11 Ethics and Legal Responsibilities: 8.2, 8.3 Leadership and Teamwork: 9.6 Technical Knowledge and Skills: 10.1, 10.2</p> <p>CTE Pathway: D1.1, D1.2, D1.3, D9.1, D9.2</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(9 hours)	f. basic laws regarding construction elevators g. safety laws applying to electrical tools 15. Pass the safety exam with 100% accuracy.	
B. RESOURCE MANAGEMENT REVIEW Review, apply, and evaluate resource management principles and techniques in the construction business.	1. Review the following definitions: a. resources b. management c. sustainability 2. Review the importance of managing the following resources in the construction business: a. time b. materials c. personnel 3. Review specific examples of effective management of the following in the construction business: a. time b. materials c. personnel 4. Review the benefits of effective resource management in the construction business: a. profitability b. sustainability c. company growth 5. Review the economic benefits and liabilities of managing resources in an environmentally responsible way.	Career Ready Practice: 1, 2, 5, 7, 9 CTE Anchor: Communications: 2.1 Problem Solving and Critical Thinking: 5.1 Health and Safety: 6.7, 6.11 Responsibility and Flexibility: 7.1, 7.2, 7.3, 7.4, 7.6 Ethics and Legal Responsibilities: 8.1, 8.3, 8.4 Leadership and Teamwork: 9.2 CTE Pathway: D1.1, D1.2
C. TRADE MATHEMATICS REVIEW Review, apply, and evaluate the mathematics required in construction work.	1. Review the practical applications of math in construction work. 2. Review and demonstrate problem-solving techniques involving whole number problems, using arithmetic operations (addition, subtraction, multiplication, and division). 3. Review and demonstrate problem-solving techniques involving various fraction problems using arithmetic operations. 4. Review and demonstrate problem-solving techniques involving various decimal problems using addition, subtraction, multiplication, and division. 5. Review and demonstrate techniques for changing fractions to decimals. 6. Review and demonstrate techniques for changing decimals to fractions. 7. Review the English system of measuring length. 8. Review the English system of measuring weight. 9. Review the English system of measuring volume or capacity. 10. Review the relationships between various English system linear units of measurement, such as inches, feet, yards, and miles.	Career Ready Practice: 1, 2, 5 CTE Anchor: Communications: 2.1, 2.3 Problem Solving and Critical Thinking: 5.1, 5.2, 5.4 Technical Knowledge and Skills: 10.1

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(5 hours)	<ol style="list-style-type: none"> 11. Review the relationships between various English system units of volume or capacity, such as cups, pints, quarts, and gallons. 12. Review and demonstrate problem-solving techniques for various English system measuring problems using arithmetic operations. 13. Review and demonstrate measuring techniques for objects by using the English system measuring tools common to the trade. 14. Review and demonstrate problem-solving techniques for geometric problems. 15. Review and demonstrate problem-solving techniques for algebraic problems. 16. Review and demonstrate problem-solving techniques using percentages. 17. Review and demonstrate techniques for reading and interpreting graphs. 18. Review and demonstrate techniques for using a calculator. 19. Review practical application of tape measure 	<p>CTE Pathway: D1.1, D2.1, D2.2, D2.3, D3.1, D3.2, D3.3, D3.4, D3.5, D3.6</p>
<p>D. FINISH CARPENTRY</p> <p>Understand, apply, and evaluate the techniques, tools, and materials required for finish carpentry work.</p> <p>(40 Hours)</p>	<ol style="list-style-type: none"> 1. Identify the different sizes and uses of finishing nails. 2. Review and demonstrate proper use of a power miter saw. 3. Describe and demonstrate the techniques for cutting and applying the following: <ol style="list-style-type: none"> 1. baseboards 2. casings 3. moldings 4. Describe and demonstrate the techniques for installing kitchen and bathroom cabinets. 5. Describe and demonstrate the techniques for hanging a door. 6. Describe and demonstrate the techniques for installing and repairing windows. 7. Safety review 	<p>Career Ready Practice: 1, 2, 5, 12</p> <p>CTE Anchor: Communications: 2.1, 2.3, 2.5 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.2, 6.4, 6.5, 6.6, 6.7, 6.11, 6.12 Ethical and Legal Responsibilities: 8.1, 8.2 Technical Knowledge and Skills: 10.1, 10.2</p> <p>CTE Pathway: D6.6, D7.7, D7.8</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>E. PLUMBING REVIEW</p> <p>Understand, apply, and evaluate the techniques, tools, and materials used for plumbing installation and repair.</p> <p>(10 Hours)</p>	<ol style="list-style-type: none"> 1. Review the safety issues specific to plumbing. 2. Review the different types of: <ol style="list-style-type: none"> a. wrenches used in plumbing repair b. pipes <ol style="list-style-type: none"> i. iron ii. galvanized iii. copper iv. plastic c. valves d. plumbing fixtures <ol style="list-style-type: none"> i. sinks ii. toilets iii. bathtubs iv. showers v. appliances 3. Review and demonstrate the use of cutting and threading tools. 4. Review and demonstrate the uses for different types and sizes of pipes. 5. Review and demonstrate the operation of various types of plumbing fixtures, such as sinks, toilets, bathtub/showers, sprinklers, and appliance hook-ups. 6. Review and demonstrate proper soldering techniques. 7. Review and demonstrate the techniques for repairing and/or replacing various types of valves. 8. Review and demonstrate the techniques for repairing the following various plumbing problems: <ol style="list-style-type: none"> a. leaking faucets b. blocked sewer lines c. blocked toilets d. leaking pipes and drains 9. Review and demonstrate the techniques for replacing faucets, shower heads, toilets, and sprinkler heads. 10. Review and demonstrate the techniques for installing the following appliances into a wall: <ol style="list-style-type: none"> a. sink b. dishwashers c. garbage disposers d. washing machines Review the different types of landscape sprinkler set-ups and fittings. 12. Review and demonstrate the techniques for assembling landscape sprinkler pipes. 13. Review the difference between LEED-approved plumbing materials and standard plumbing materials. 14. Safety review 	<p>Career Ready Practice: 1, 2, 5, 12</p> <p>CTE Anchor: Communications: 2.1, 2.3, 2.5 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.11, 6.12 Ethics and Legal Responsibilities: 8.1, 8.2 Technical Knowledge and Skills: 10.1, 10.2</p> <p>CTE Pathway: D4.1, D10.1, D10.3, D10.9, D10.10, D10.12</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>F. ELECTRICAL</p> <p>Understand, apply, and evaluate the techniques, tools, and materials used for basic wiring and minor electrical repairs.</p> <p>(50 Hours)</p>	<ol style="list-style-type: none"> 1. Describe the national and local electrical code specifications. 2. Describe the safety issues specific to the wiring system. 3. Identify the different types of: <ol style="list-style-type: none"> a. pliers used in electrical repair b. cutting tools c. splicing tools d. electrical connectors e. electrical switches f. electrical receptacles 4. Describe and demonstrate the use of the following: <ol style="list-style-type: none"> a. pliers used in electrical repair b. cutting tools c. splicing tools d. electrical connectors e. electrical switches f. electrical receptacles 5. Differentiate between metallic and non-metallic sheathed cables. 6. Describe the functions of main switches, circuit breakers, and fuses. 7. Describe and demonstrate the techniques for replacing wall receptacles and wall switches. 8. Describe the difference between LEED-approved electrical materials and standard electrical materials. 9. Discuss wire size and relationship ampacity. 10. Discuss box fill. 11. Calculate size of branch feeders. 12. Differentiate between main panel and sub panel. 13. Describe and demonstrate the techniques for installing light fixtures. 14. Describe electrical troubleshooting techniques. 15. Describe and demonstrate the techniques for hard wiring appliances. 16. Describe briefly three phase wiring and theory. 17. Review electrical codes, wiring, care & use of tools, conductivity, switches, installation of electrical and LEED awareness 18. Describe NFPA 70E training 19. Discuss low/high voltage 20. Safety review 	<p>Career Ready Practice: 1, 2, 5, 12</p> <p>CTE Anchor: Communications: 2.1,2.3, 2.5 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.11, 6.12 Ethics and Legal Responsibilities: 8.1, 8.2 Technical Knowledge and Skills: 10.1, 10.2</p> <p>CTE Pathway: D1.2, D9.1, D9.2, D9.3, D11.3, D11.4, D11.7, D11.9, D11.10, D11.11</p>
<p>G. ROOFING</p> <p>Understand, apply, and evaluate the techniques, tools, and materials needed for installing and/or replacing a roof.</p>	<ol style="list-style-type: none"> 1. Describe the impact of the following on the installation and repair of roofs: <ol style="list-style-type: none"> a. sun b. snow c. ice d. rain e. wind 	<p>Career Ready Practice: 1, 2, 5, 12</p> <p>CTE Anchor: Communications: 2.1, 2.3, 2.5</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(30 Hours)	<ul style="list-style-type: none"> f. moisture g. trees h. algae i. moss <ol style="list-style-type: none"> 2. Describe the features and applications of the following types of roofs: <ul style="list-style-type: none"> a. composite shingle b. asphalt shingle c. corrugated sheet d. wood e. metal f. built-up roofing (torch down and hot mop) g. tile h. slate 3. Describe the local building codes that dictate roof types. 4. Describe the local building mandates on the number of layers to be installed to satisfy the required replacement. 5. Describe the importance of proper planning, estimating, and ordering of roofing materials. 6. Describe and demonstrate the proper sheathing requirements. 7. Describe and demonstrate the proper fastening requirements. 8. Describe and demonstrate the calculation and installation techniques required for adequate roof ventilation. 9. Describe and demonstrate valley flashing and weaving of shingles. 10. Describe and demonstrate the techniques for skylight installation. 11. Describe and demonstrate the techniques for preparing a roof deck for shingles. 12. Describe and demonstrate the installation techniques for shingles. 13. Describe and demonstrate the techniques for flashing critical roof-to-roof and roof-to-wall connections. 14. Describe and demonstrate the techniques for stripping and re-shingling an old roof. 15. Describe the difference between LEED-approved roofing materials and standard roofing materials. 16. Safety review 	<p>Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4</p> <p>Health and Safety: 6.1, 6.2, 6.3, 5.4, 6.5, 6.6, 6.7, 6.11, 6.12</p> <p>Ethics and Legal Responsibilities: 8.1, 8.2</p> <p>Technical Knowledge and Skills: 10.1, 10.2</p> <p>CTE Pathway: D1.1, D1.2, D1.3, D2.1, D6.14, D6.15, D6.16, D8.9, D9.1, D9.2</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>H. PAINTING</p> <p>Understand, apply, and evaluate the techniques, tools, and materials employed for painting the interior and exterior of a residential/commercial building.</p> <p>(25 Hours)</p>	<ol style="list-style-type: none"> 1. Describe uses for water-based paint. 2. Describe uses for water-based paint. 3. Define and demonstrate the techniques for: <ol style="list-style-type: none"> a. finish sanding b. using brushes and rollers c. priming and sealing wood and plaster d. applying paint e. staining f. siphoning spray gun g. using an airless type spray gun h. storing flammable materials 4. Define the difference between LEED-approved painting materials and standard painting materials. 5. Describe Product Safety Data Sheets (PSD) 6. Safety review 	<p>Career Ready Practice: 1, 2, 5, 12</p> <p>CTE Anchor: Communications: 2.1, 2.3, 2.5 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.2, 6.4, 6.5, 6.6, 6.7, 6.11, 6.12 Ethical and Legal Responsibilities: 8.1, 8.2 Technical Knowledge and Skills: 10.1, 10.2</p> <p>CTE Pathway: D1.1, D1.2, D1.3, D8.4, D8.5</p>
<p>I. EMPLOYABILITY SKILLS REVIEW</p> <p>Review, apply, and evaluate the employability skills required in construction.</p>	<ol style="list-style-type: none"> 1. Review employer requirements for the following: <ol style="list-style-type: none"> a. punctuality b. attendance c. attitude toward work d. quality of work e. teamwork f. responsibility timeliness g. communication skills 2. Update researched data on potential employers. 3. Review the role of social media in job search. 4. Finalize a résumé and cover letter. 5. Review the importance of filling out a job application legibly, with accurate and complete information. 6. Review the common mistakes that are made on job applications. 7. Complete sample job application forms correctly. 8. Review the importance of enthusiasm in the interview and on a job. 9. Review the importance of appropriate appearance in the interview and on a job. 10. Review the importance of the continuous upgrading of job skills. 	<p>Career Ready Practice: 1, 2, 3, 5, 7, 8, 11, 12</p> <p>CTE Anchor: Communications: 2.1, 2.2, 2.4 Career Planning and Management: 3.2, 3.3, 3.4, 3.8, 3.9 Technology: 4.1, 4.4 Critical Thinking: 5.1, 5.2, 5.3, 5.4 Responsibility and Flexibility: 7.2, 7.4, 7.6, 7.7 Technical Knowledge and Skills: 10.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(5 Hours)	<ol style="list-style-type: none"> 11. Review customer service as a method of building permanent relationships between the organization and the customer. 12. Review and demonstrate appropriate interviewing techniques. 13. Review the informational materials and resources needed to be successful in an interview. 14. Finalize a sample follow-up letter. 15. State the importance of having a driver's license 16. Review and demonstrate appropriate follow-up procedures. 	<p>Demonstration and Application: 11.1</p> <p>CTE Pathway: D1.1</p>
<p>J. ENTREPRENEURIAL SKILLS</p> <p>Review, apply, and evaluate the process involved in becoming an entrepreneur in the construction industry.</p> <p>(5 Hours)</p>	<ol style="list-style-type: none"> 1. Define entrepreneurship. 2. Identify the necessary characteristics of successful entrepreneurs. 3. Define the contributions of entrepreneurs to the construction industry. 4. Explain the purpose and components of a business plan. 5. Examine personal goals prior to opening a business. 6. Evaluate sources of monetary investment in a business opportunity. 7. Define licensing requirements for the construction business. 8. Develop a scenario depicting the student as a construction business owner. 9. Differentiate between LEED business practices and standard business practices. 10. Evaluate the requirements of running a construction business 11. Evaluate the varied construction trades 12. Define the requirements for a contractor's license 	<p>Career Ready Practice: 2, 3, 5, 6, 7, 8, 12</p> <p>CTE Anchor:</p> <p>Communications: 2.2, 2.3, 2.4, 2.5</p> <p>Career Planning and Management: 3.2, 3.3, 3.4, 3.6, 3.7, 3.9</p> <p>Technology: 4.1, 4.2</p> <p>Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4</p> <p>Responsibility and Flexibility: 7.1, 7.2, 7.4, 7.6, 7.7, 7.8</p> <p>Ethics and Legal Responsibilities: 8.4, 8.5</p> <p>Leadership and Teamwork: 9.1, 9.2, 9.4</p> <p>Technical Knowledge and Skills: 10.1, 10.2, 10.4</p> <p>Demonstration and Application: 11.5</p> <p>CTE Pathway: D1.1, D1.2</p>

SUGGESTED INSTRUCTIONAL MATERIALS and OTHER RESOURCES

TEXTS AND SUPPLEMENTAL BOOKS

Allen, Edward and Joseph Iano. Fundamentals of Building Construction: Materials and Methods, 5th Edition. Wiley, 2008.

Beall, Christine. Masonry and Concrete. The McGraw-Hill Companies, 2000.

Kicklighter, Clois E. Modern Masonry, 7th Edition. Goodheart-Willcox Publishing, 2009.

Kubba, Sam. Blueprint Reading: Construction Drawings for the Building Trades. The McGraw-Hill Companies, 2008.

Peters, Rick. Framing Basics. Main Street Press, 2003.

Thallon, Rob. Graphic Guide to Frame Construction. Taunton Press, Inc., 2009.

RESOURCES

Employer Advisory Board members

CTE Model Curriculum Standards

<http://www.cde.ca.gov/ci/ct/sf/documents/buildingconstruct.pdf>

California Building Standards Commission

www.bsc.ca.gov/default.htm

Green Building Advisor.com

greenbuildingadvisor.com

The Daily Green

thedailygreen.com

COMPETENCY CHECKLIST

TEACHING STRATEGIES and EVALUATION

METHODS AND PROCEDURES

- A. Lecture and discussion
- B. Multimedia presentations
- C. Visual aids
- D. Shop demonstrations
- E. Projects
- F. Individualized instruction

EVALUATION

SECTION A – Introduction and Safety – Pass the safety test with 100% accuracy.

SECTION B – Resource Management Review – Pass all assignments and exams on resource management review with a minimum score of 80% or higher.

SECTION C – Trade Mathematics Review – Pass all assignments and exams on trade mathematics review with a minimum score of 80% or higher.

SECTION D – Finish Carpentry – Pass all assignments and exams on finish carpentry with a minimum score of 80% or higher.

SECTION E – Plumbing II – Pass all assignments and exams on plumbing II with a minimum score of 80% or higher.

SECTION F – Electrical II – Pass all assignments and exams on electrical II with a minimum score of 80% or higher.

SECTION G – Roofing – Pass all assignments and exams on roofing with a minimum score of 80% or higher.

SECTION H – Painting – Pass all assignments and exams on painting with a minimum score of 80% or higher.

SECTION I – Employability Skills Review – Pass all assignments and exams on employability skills review with a minimum score of 80% or higher.

SECTION J – Entrepreneurial Skills – Pass all assignments and exams on entrepreneurial skills with a minimum score of 80% or higher.

Standards for Career Ready Practice

1. Apply appropriate technical skills and academic knowledge.

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education. They make connections between abstract concepts with real-world applications and recognize the value of academic preparation for solving problems, communicating with others, calculating measures, and performing other work-related practices.

2. Communicate clearly, effectively, and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, using written, verbal, electronic, and/or visual methods. They are skilled at interacting with others: they are active listeners who speak clearly and with purpose, and they are comfortable with terminology that is common to workplace environments. Career-ready individuals consider the audience for their communication and prepare accordingly to ensure the desired outcome.

3. Develop an education and career plan aligned with personal goals.

Career-ready individuals take personal ownership of their educational and career goals and manage their individual plan to attain these goals. They recognize the value of each step in the educational and experiential process, and they understand that nearly all career paths require ongoing education and experience to adapt to practices, procedures, and expectations of an ever-changing work environment. They seek counselors, mentors, and other experts to assist in the planning and execution of education and career plans.

4. Apply technology to enhance productivity.

Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring and using new technology. They understand the inherent risks—personal and organizational—of technology applications, and they take actions to prevent or mitigate these risks.

5. Utilize critical thinking to make sense of problems and persevere in solving them

Career-ready individuals recognize problems in the workplace, understand the nature of the problems, and devise effective plans to solve the problems. They thoughtfully investigate the root cause of a problem prior to introducing solutions. They carefully consider options to solve a problem and, once agreed upon, follow through to ensure the problem is resolved.

6. Practice personal health and understand financial literacy.

Career-ready individuals understand the relationship between personal health and workplace performance. They contribute to their personal well-being through a healthy diet, regular exercise, and mental health activities. Career-ready individuals also understand that financial literacy leads to a secure future that enables career success.

7. Act as a responsible citizen in the workplace and the community.

Career-ready individuals understand the obligations and responsibilities of being a member of a community and demonstrate this understanding every day through their interactions with others. They are aware of the impacts of their decisions on others and the environment around them, and they think about the short-term and long-term consequences of their actions. They are reliable and consistent in going beyond minimum expectations and in participating in activities that serve the greater good.

8. Model integrity, ethical leadership, and effective management.

Career-ready individuals consistently act in ways that align with personal and community-held ideals and principles. They employ ethical behaviors and actions that positively influence others. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the direction and actions of a team or organization, and they recognize the short-term and long-term effects that management's actions and attitudes can have on productivity, morale, and organizational culture.

9. Work productively in teams while integrating cultural and global competence.

Career-ready individuals contribute positively to every team, as both team leaders and team members. To avoid barriers to productive and positive interaction, they apply an awareness of cultural differences. They interact effectively and sensitively with all members of the team and find ways to increase the engagement and contribution of other members.

10. Demonstrate creativity and innovation.

Career-ready individuals recommend ideas that solve problems in new and different ways and contribute to the improvement of the organization. They consider unconventional ideas and suggestions by others as solutions to issues, tasks, or problems. They discern which ideas and suggestions may have the greatest value. They seek new methods, practices, and ideas from a variety of sources and apply those ideas to their own workplace practices.

11. Employ valid and reliable research strategies.

Career-ready individuals employ research practices to plan and carry out investigations, create solutions, and keep abreast of the most current findings related to workplace environments and practices. They use a reliable research process to search for new information and confirm the validity of sources when considering the use and adoption of external information or practices.

12. Understand the environmental, societal, and economic impacts of decisions.

Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact other people, organizations, the workplace, and the environment. They are aware of and utilize new technologies, understandings, procedures, and materials and adhere to regulations affecting the nature of their work. They are cognizant of impacts on the social condition, environment, workplace, and profitability of the organization.

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