

Course Outline

Building and Construction Trades

REVISED: August/2017

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

71-35-60

Construction Work/2

Credits: 15

Hours: 180

Course Description:

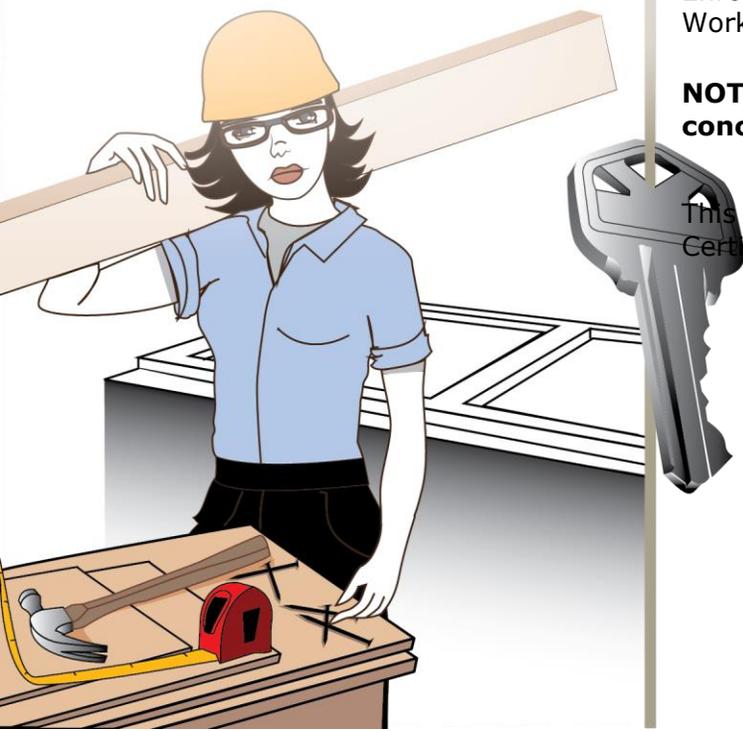
This competency-based course is the second in a sequence of three designed for construction work. It provides students with technical instruction and practical experience in basic residential commercial and earthquake retrofitting in construction using sustainable and green technology. Instruction includes an introduction, workplace safety, and reviews of resource management, trade mathematics, plumbing, employability skills, Los Angeles Department of Water & Power (DWP) infrastructure, earthquake resistant pipe replacement and drywall installation. It also covers the operation, maintenance, and storage of power tools. 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/1 (71-35-50) course.

NOTE: For Perkins purposes this course has been designated as a **concentrator** 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

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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. 7-13

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. 15

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/2 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> <p>(9 hours)</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 f. basic laws regarding construction elevators g. safety laws applying to electrical tools 15. Pass the safety exam with 100% accuracy. 	<p>Career Ready Practice: 6, 12</p> <p>CTE Anchor: Communications: 2.3, 2.4, 2.5 Career Planning and Management: 3.4, 3.6 Health and Safety: 6.2, 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: 10.2</p> <p>CTE Pathway: D1.1, D1.2, D1.3, D9.1, D9.2</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>B. RESOURCE MANAGEMENT REVIEW</p> <p>Review, apply, and evaluate resource management principles and techniques in the construction business.</p> <p>(1 hour)</p>	<ol style="list-style-type: none"> 1. Review the following definitions: <ol style="list-style-type: none"> a. resources b. management c. sustainability 2. Review the importance of managing the following resources in the construction business: <ol style="list-style-type: none"> a. time b. materials c. personnel 3. Review specific examples of effective management of the following in the construction business: <ol style="list-style-type: none"> a. time b. materials c. personnel 4. Review the benefits of effective resource management in the construction business: <ol style="list-style-type: none"> a. profitability b. sustainability c. company growth 5. Review the economic benefits and liabilities of managing resources in an environmentally responsible way. 	<p>Career Ready Practice: 2</p> <p>CTE Anchor: Career Planning and Management: 3.5 Problem Solving and Critical Thinking: 5.2 Responsibility and Flexibility: 7.1, 7.2, 7.4, 7.6 Technical Knowledge and Skills: 10.1</p> <p>CTE Pathway: D2.3</p>
<p>C. TRADE MATHEMATICS REVIEW</p> <p>Review, apply, and evaluate the mathematics required in construction work.</p>	<ol style="list-style-type: none"> 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. 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. 	<p>Career Ready Practice: 1, 2, 5</p> <p>CTE Anchor: Communications: 2.1, 2.2, 2.3</p> <p>CTE Pathway: D2.1, D2.2, D2.3</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	<ul style="list-style-type: none"> 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. 	
<p>D. PLUMBING</p> <p>Understand, apply, and evaluate the techniques, tools, and materials used for basic plumbing and minor repairs.</p>	<ul style="list-style-type: none"> 1. Describe the safety issues specific to plumbing. 2. Identify the different types of: <ul style="list-style-type: none"> a. wrenches used in plumbing repair b. pipes <ul style="list-style-type: none"> I. iron II. galvanized III. copper IV. plastic c. valves d. plumbing fixtures <ul style="list-style-type: none"> I. sinks II. toilets III. bathtubs IV. showers V. appliances 3. Describe and demonstrate the use of cutting and threading tools. 4. Describe and demonstrate the uses for different types and sizes of pipes. 5. Describe and demonstrate the operation of various types of plumbing fixtures, such as sinks, toilets, bathtub/showers, sprinklers, and appliance hook-ups. 6. Describe and demonstrate proper soldering techniques. 7. Describe and demonstrate the techniques for repairing and/or replacing various types of valves. 8. Describe and demonstrate the techniques for repairing the following various plumbing problems: <ul style="list-style-type: none"> a. leaking faucets b. blocked sewer lines c. blocked toilets d. leaking pipes and drains 9. Describe and demonstrate the techniques for replacing faucets, shower heads, toilets, and sprinkler heads. 10. Describe the difference between LEED-approved plumbing materials and standard plumbing materials. 	<p>Career Ready Practice: 1, 4, 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: 6.5 Ethics and Legal Responsibilities: 8.2 Technical Knowledge and Skills: 10.2</p> <p>CTE Pathway: D1.1, D4.1, D10.1, D10.3, D10.8, D10.9, D10.12</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(50 Hours)	<ol style="list-style-type: none"> 11. Describe and demonstrate the techniques for installing the following appliances in the wall: <ol style="list-style-type: none"> a. Sink b. Dishwashers c. Garbage Disposers d. Washing Machine 12. Identify the different types of landscape sprinklers set-ups and fittings. 13. Demonstrate the techniques for assembling landscape sprinkler pipes. 14. Demonstrate the proper use of cranes and crane signals. 15. Demonstrate the ability to select the proper equipment for moving an object. 	
<p>E. LOS ANGELES-DWP INFRASTRUCTURE EARTHQUAKE RESISTANT PIPE REPLACEMENT</p> <p>Understand, apply, and evaluate the techniques, tools, and materials for earthquake retrofitting work in the plumbing and pipe trades.</p>	<ol style="list-style-type: none"> 1. Describe ground movement and fault zones. <ol style="list-style-type: none"> a. Explain stresses on piping and failure resulting from seismic motion b. Discuss other causes of pipe failure, which can be exacerbated by earthquakes: <ol style="list-style-type: none"> i. Age ii. Corrosive soil iii. Seasonal temperature iv. Pressure cycles 2. Explain the types of equipment used for trenching: <ol style="list-style-type: none"> a. Rotary/chain trenchers b. Boring machines c. Backhoe d. Trackhoe/excavators e. Pipe layers f. Hydraulic Shoring g. Trench Box h. Road plates 3. Discuss the OSHA requirements and safety for trenching: <ol style="list-style-type: none"> a. Dig alert and requirements b. Soil classification and requirements c. Sloping and benching d. Hazards and safety precaution e. OSHA rules f. Traffic and worker safety g. Certificates for OSHA 10, Asbestos, Confined spaces & etc. 4. Compare and contrast types of underground water supply piping and types of connections: <ol style="list-style-type: none"> a. Cast Iron (about 60% of LA water piping) b. Steel (about 15% of LA water piping) c. Ductile Iron (about 12% of LA water piping) d. Asbestos Cement (about 10 % of LA water piping) e. Copper f. Plastic, all types, PEX, PB, PVC, PCPVC, PP, PE, HDPE... g. Hub and spigot h. Threaded 	<p>Career Ready Practice: 2, 4, 6, 7, 12</p> <p>CTE Anchor: Communications: 2.1, 2.3, 2.5 Technology: 4.2, 4.3, 4.5, 4.6 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, 6.11, 6.12 Ethics and Legal Responsibilities: 8.1, 8.2 Technical Knowledge and Skills: 10.1, 10.2, 10.4</p> <p>CTE Pathway: D1.1, D1.2, D1.3, D10.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(30 Hours)	<ul style="list-style-type: none"> i. Glued j. Soldered k. Clamped/Mechanical/Crimped/Compression/Flared/Flanged l. Welded/gas, arc, Heat-fusion/friction m. Slipped/locks n. Requirements for sleeves <p>5. Explain and demonstrate seismic designed piping.</p> <ul style="list-style-type: none"> a. Earthquake Resistant Ductile Iron Pipe (ERDIP) Kubota Corp. b. HDPE (High Density Poly-Ethylene) c. Swing joints and offset d. Mechanical grooved pipe and fittings, i.e.- Victaulic <p>6. Replacement of ground and finish procedures</p> <ul style="list-style-type: none"> e. Temporary service/ install and removal f. Shading of pipe and utilities g. Compaction and lifts h. Locator wires i. Asphalt/concrete 	
<p>F. DRYWALL INSTALLATION</p> <p>Understand, apply, and evaluate the techniques, tools, and materials for cutting, replacing, and taping drywall.</p> <p>(40 Hours)</p>	<ul style="list-style-type: none"> 1. Identify the different types of the following: <ul style="list-style-type: none"> a. drywall saws b. utility knives c. drywall nails d. drywall screws 2. Describe and demonstrate uses of the different types of the following: <ul style="list-style-type: none"> a. drywall saws b. utility knives c. drywall nails d. drywall screws 3. Describe and demonstrate the techniques for taping and spackling drywall. 4. Describe and demonstrate the techniques for applying drywall compound and matching various surface finishes. 5. Describe and demonstrate the techniques for applying corner beading. 6. Describe and demonstrate the techniques for hanging drywall, using nail patterns according to local codes. 7. Describe the difference between LEED-approved drywall materials and standard drywall materials. 	<p>Career Ready Practice: 1, 2, 12</p> <p>CTE Anchor: Communications: 2.1, 2.5 Problem Solving and Critical Thinking: 5.1 Health and Safety: 6.1, 6.5, 6.6 Technical Knowledge and Skills: 10.1, 10.2</p> <p>CTE Pathway: D1.2, D7.1, D7.2, D7.3, D7.4</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p>G. POWER TOOLS</p> <p>Understand, apply, and evaluate the techniques for using, maintaining, and storing power tools.</p> <p>(35 Hours)</p>	<ol style="list-style-type: none"> 1. Define and demonstrate the safe operation of the following electric and pneumatic power hand tools: <ol style="list-style-type: none"> a. portable drill motors b. portable router c. portable disc sander d. portable belt sander e. pneumatic sanders f. pneumatic nailers and staplers g. veneer trimmer 2. Define the features, and demonstrate the proper use, maintenance, and storage of the following woodworking machines: <ol style="list-style-type: none"> a. radial arm saw b. circular saw c. boring machine d. drill press e. grinder f. power miter saw band saw g. jig saw h. jointer i. lathe j. belt and disc sander k. planer l. shaper 3. Define and demonstrate the safe operations of support equipment, such as: <ol style="list-style-type: none"> a. compressor b. dust and chip vacuum system 4. List safety precautions for each related chemical required while using a specific tool, machine or piece of equipment. 	<p>Career Ready Practice: 2, 4, 10</p> <p>CTE Anchor: Communications: 2.1, 2.5 Health and Safety: 6.3, 6.6, 6.7, 6.12 Technical Knowledge and Skills: 10.5</p> <p>CTE Pathway: D1.1, D3.7</p>
<p>H. 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. Update a sample 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. 	<p>Career Ready Practice: 2, 3</p> <p>CTE Anchor: Communications: 2.2, 2.4 Career Planning and Management: 3.1, 3.2, 3.3, 3.4, 3.8, 3.9 Responsibility and Flexibility: 7.2, 7.7</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(5 Hours)	<ol style="list-style-type: none"> 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. 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. Update a sample follow-up letter. 15. Review and demonstrate appropriate follow-up procedures. 	<p>CTE Pathway: D1.1</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 – Plumbing I – Pass all assignments and exams on plumbing I with a minimum score of 80% or higher.

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

SECTION F – Drywall Installation – Pass all assignments and exams on drywall installation with a minimum score of 80% or higher.

SECTION G – Power Tools – Pass all assignments and exams on power tools with a minimum score of 80% or higher.

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

Statement for Civil Rights

All educational and vocational opportunities are offered without regard to race, color, national origin, gender, or physical disability.
