

# Course Outline

Building and Construction Trades

REVISED: August/2017

**Job Title**

Tile and Marble Setters

**Career Pathway:**

Residential and Commercial Construction

**Industry Sector:**

Building and Construction Trades

**O\*NET-SOC CODE:**

47-2044.00

**CBEDS Title:**

Residential and Commercial Construction

**CBEDS No.:**

5502

**71-55-85**

## Tile Technician/2: Tile and Marble

**Credits:** 5

**Hours:** 90

**Course Description:**

This competency-based course is the second in a sequence of three courses designed for Tile, Marble, and Granite installation. It provides students with technical instruction and practical experience for the installation of tile and marble using sustainable and green technology techniques. Focus in this competency-based course is on marble product installation. Instruction includes an orientation, workplace safety, reviews of resource management, trade mathematics, and employability skills, and an introduction to entrepreneurship. 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 Tile Technician/1 (71-55-80) 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**

pp. 7-12

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)**

<b>COURSE OUTLINE COMPONENTS</b>	<b>LOCATION</b>
<b>INSTRUCTIONAL STRATEGIES</b>	p. 14
<p>Instructional techniques or methods could include laboratory techniques, lecture method, small-group discussion, grouping plans, and other strategies used in the classroom.</p> <p>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.</p>	
<b>UNITS OF STUDY, WITH APPROXIMATE HOURS ALLOTTED FOR EACH UNIT</b>	Cover
<p>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.</p> <p>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.</p>	
<b>EVALUATION PROCEDURES</b>	p. 14
<p>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.</p> <p>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.</p>	
<b>REPETITION POLICY THAT PREVENTS PERPETUATION OF STUDENT ENROLLMENT</b>	Cover
<p>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.</p>	

## ***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.

ANA MARTINEZ  
Specialist  
Career Technical Education

ROSARIO GALVAN  
Administrator  
Division of Adult and Career Education

APPROVED:

JOE STARK  
Executive Director  
Division of Adult and Career Education

# **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 Tile Technician/2: Tile and Marble 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"> <li>1. Review the scope and purpose of the course.</li> <li>2. Review the overall course content as a part of the Linked Learning Initiative.</li> <li>3. Review classroom policies and procedures.</li> <li>4. Review classroom and workplace first aid and emergency procedures.</li> <li>5. Review the different occupations in the Building Trades and Construction Industry Sector which have an impact on the role of the flooring technicians.</li> <li>6. Review the opportunities available for promoting gender equity and the representation of non-traditional populations in flooring installation.</li> <li>7. Review the impact of Environmental Protection Agency (EPA) legislation on the Building Trades and Construction Industry Sector practices.</li> <li>8. Review and demonstrate the procedures for contacting proper authorities for the removal of hazardous materials based on the EPA standards.</li> <li>9. Review and demonstrate the use of the Material Safety Data Sheet (MSDS) as it applies to flooring installation.</li> <li>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.</li> <li>11. Review the City of Los Angeles Building and Safety Codes and their applications to flooring installation.</li> <li>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 Trades and Construction Industry Sector.</li> <li>13. Review the purpose of the California Occupational Safety and Health Administration (Cal/OSHA) and its laws governing flooring technicians.</li> <li>14. Review how each of the following insures a safe workplace:               <ol style="list-style-type: none"> <li>a. employees' rights as they apply to job safety</li> <li>b. employees' obligations as they apply to safety</li> <li>c. role of the Division of Workers' Compensation (DWC)</li> <li>d. safety requirements in buildings during construction</li> </ol> </li> </ol>	<p><b>Career Ready Practice:</b> 1, 3, 6, 8, 9, 12</p> <p><b>CTE Anchor:</b> Communications: 2.1, 2.3, 2.4, 2.5 Career Planning and Management: 3.4, 3.5, 3.6, 3.7 Problem Solving and Critical Thinking: 5.1, 5.4 Health and Safety: 6.1, 6.2, 6.6 Responsibility and Flexibility: 7.8 Ethics and Legal Responsibilities: 8.2, 8.3 Leadership and Teamwork: 9.5 Technical Knowledge and Skills: 10.1, 10.2</p> <p><b>CTE Pathway:</b> D1.2, D7.6, D9.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(2 hours)	<ul style="list-style-type: none"> <li>e. safe use of scaffolding and ladder requirements</li> <li>f. basic laws regarding construction elevators</li> <li>g. safety laws applying to electrical tools</li> </ul> 15. Pass the safety exam with 100% accuracy.	
<b>B. RESOURCE MANAGEMENT REVIEW</b>  Review, apply, and evaluate resource management principles and techniques in the tile and marble setting installation business.	<ol style="list-style-type: none"> <li>1. Review the following definitions:               <ul style="list-style-type: none"> <li>a. resources</li> <li>b. management</li> <li>c. sustainability</li> </ul> </li> <li>2. Review the importance of managing the following resources in the flooring installation business:               <ul style="list-style-type: none"> <li>a. time</li> <li>b. materials</li> <li>c. personnel</li> </ul> </li> <li>3. Review specific examples of effective management of the following in the flooring installation business:               <ul style="list-style-type: none"> <li>a. time</li> <li>b. materials</li> <li>c. personnel</li> </ul> </li> <li>4. Review the benefits of effective resource management in the flooring installation business:               <ul style="list-style-type: none"> <li>a. profitability</li> <li>b. sustainability</li> <li>c. company growth</li> </ul> </li> <li>5. Review the economic benefits and liabilities of managing resources in an environmentally responsible way.</li> </ol>	<b>Career Ready Practice:</b> 1, 2, 3, 5, 7, 8, 9, 11  <b>CTE Anchor:</b> Responsibility and Flexibility: 7.6 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.4  <b>CTE Pathway:</b> D2.3
<b>C. TRADE MATHEMATICS REVIEW</b>  Review, apply, and evaluate the mathematics required in stone and marble installation.	<ol style="list-style-type: none"> <li>1. Review the practical applications of math in flooring installation.</li> <li>2. Review and demonstrate problem-solving techniques involving whole number problems, using arithmetic operations (addition, subtraction, multiplication, and division).</li> <li>3. Review and demonstrate problem-solving techniques involving various fraction problems using arithmetic operations.</li> <li>4. Review and demonstrate problem-solving techniques involving various decimal problems using addition, subtraction, multiplication, and division.</li> <li>5. Review and demonstrate techniques for changing fractions to decimals.</li> <li>6. Review and demonstrate techniques for changing decimals to fractions.</li> <li>7. Review the English system of measuring length.</li> <li>8. Review the English system of measuring weight.</li> <li>9. Review the English system of measuring volume or capacity.</li> <li>10. Review and demonstrate problem-solving techniques for various English system measuring problems using arithmetic operations.</li> <li>11. Review and demonstrate measuring techniques for objects by using the English system measuring tools common to the trade.</li> </ol>	<b>Career Ready Practice:</b> 1, 3, 5  <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.2, 5.3 Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.1  <b>CTE Pathway:</b> D2.1

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(3 hours)	12. Review and demonstrate problem-solving techniques for geometric problems. 13. Review and demonstrate problem-solving techniques for algebraic problems 14. Review and demonstrate problem-solving techniques using percentages. 15. Review and demonstrate techniques for reading and interpreting graphs. 16. Review and demonstrate techniques for using a calculator.	
<b>D. WATERPROOFING REVIEW</b>  Review, apply and evaluate the techniques, tools and materials for waterproofing.	1. Review different types of waterproofing systems. 2. Review different types of drains. 3. Review pre-slope under waterproofing. 4. Review installation of waterproofing systems: <ol style="list-style-type: none"> <li>Hot mop.</li> <li>High performance coatings.</li> <li>Vinyl or other synthetic membranes.</li> <li>Waterproofing thinset and glue.</li> </ol> 5. Review installation procedures for the following circumstances: <ol style="list-style-type: none"> <li>Height and extent of waterproofing</li> <li>Tying into drains</li> <li>Sealers</li> </ol>	<b>Career Ready Practice:</b> 1, 3, 4, 5  <b>CTE Anchor:</b> Technical Knowledge and Skills: 10.1 Demonstration and Application: 11.2  <b>CTE Pathway:</b> D7.5, D7.6, D8.11
<b>E. MORTAR FLOAT</b>  Understand, apply and evaluate the techniques, tools and materials for mortar float application.	1. Define mortar float. 2. Discuss the importance uses of mortar floats. 3. Discuss the following steps in waterproofing: <ol style="list-style-type: none"> <li>Paper/membrane requirements.</li> <li>Modern liquid water proofers.</li> <li>Overlapping requirements.</li> </ol> 4. Discuss the following in structural elements: <ol style="list-style-type: none"> <li>Chicken wire vs. galvanized diamond mesh</li> <li>Types of nails or staples or screws</li> <li>Fastening requirements</li> <li>Overlapping and splicing requirements</li> <li>Applying over concrete floor vs. wood floor.</li> </ol> 5. Discuss and demonstrate the proper methods to prepare mortar: <ol style="list-style-type: none"> <li>Pre-mix vs. jobsite mix.</li> <li>Ratio of sand to cement.</li> <li>Ratio of cement to lime.</li> <li>Ratio of mortar to water.</li> <li>Workability vs. time.</li> <li>Ratio of thickness to cracks vs. one or two coats.</li> </ol>	<b>Career Ready Practice:</b> 1, 3, 5, 11  <b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.2, 5.3 Health and Safety: 6.6 Technical Knowledge and Skills: 10.3 Demonstration and Application: 11.1  <b>CTE Pathway:</b> D2.1, D2.3, D2.7, D5.10, D6.8, D7.1, D7.2, D7.5, D10.5

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(20 hours)	<ol style="list-style-type: none"> <li>6. Demonstrate applying mortar float.               <ol style="list-style-type: none"> <li>a. Use of screeding angles/straight edges.</li> <li>b. Plumbing walls and squaring corners.</li> <li>c. Setting drains.</li> <li>d. Screeding slopes to drains.</li> <li>e. Curing requirements.</li> <li>f. Working clean, and cleaning up.</li> </ol> </li> <li>7. Calculate and compare the time to apply mortar float vs. using wonderboard and/or hardybacker.</li> </ol>	
<p>F. MARBLE &amp; POLISHED STONE INSTALLATION</p> <p>Understand, apply, and evaluate the techniques, tools, and materials for marble, polished stone or granite tile installation.</p> <p>(55 hours)</p>	<ol style="list-style-type: none"> <li>1. Identify the different types of:               <ol style="list-style-type: none"> <li>a. tools for marble tile installation</li> <li>b. marble tiles and polished stone</li> <li>c. marble adhesives</li> <li>d. additive sealers</li> <li>e. floor preparation materials</li> </ol> </li> <li>2. Differentiate commercial tiles from residential ones.</li> <li>3. Differentiate LEED-approved tiles, adhesives, and sealers from standard types.</li> <li>4. Define and demonstrate the safe and proper use of the following:               <ol style="list-style-type: none"> <li>a. tools for ceramic tile installation</li> <li>b. marble adhesives</li> <li>c. additive sealers</li> <li>d. floor preparation materials</li> </ol> </li> <li>5. Define and demonstrate the following preparation techniques for the floor surface:               <ol style="list-style-type: none"> <li>a. sweeping</li> <li>b. scraping</li> <li>c. sanding</li> <li>d. chipping dirt and irregularities from base surface</li> </ol> </li> <li>6. Define and demonstrate the following marble or polished stone tile installation techniques:               <ol style="list-style-type: none"> <li>a. filling cracks with crack preventing materials to form a smooth clean foundation</li> <li>b. laying out center lines, grid lines, and border lines on the foundation with chalk line to the true walls</li> <li>c. spreading adhesive or cement on foundation material with notched trowel</li> <li>d. applying tiles</li> <li>e. mixing and applying grout</li> <li>f. cleaning and sealing the floor surface</li> <li>g. replacing furniture</li> </ol> </li> <li>7. Review the importance of time, material, and personnel management in ceramic tile installation.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 3, 5, 12</p> <p><b>CTE Anchor:</b> Problem Solving and Critical Thinking: 5.2 Health and Safety: 6.3, 6.6 Responsibility and Flexibility: 7.1, 7.4, 7.5 Technical Knowledge and Skills: 10.1, 10.3 Demonstration and Application: 11.1</p> <p><b>CTE Pathway:</b> D1.2, D2.3, D7.1, D7.3, D7.4, D7.5, D7.6, D9.2</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p><b>G. EMPLOYABILITY SKILLS REVIEW</b></p> <p>Review, apply, and evaluate the employability skills required in flooring installation.</p> <p>(3 hours)</p>	<ol style="list-style-type: none"> <li>1. Review employer requirements for the following: <ol style="list-style-type: none"> <li>a. punctuality</li> <li>b. attendance</li> <li>c. positive attitude toward work</li> <li>d. quality of work</li> <li>e. teamwork</li> <li>f. responsibility</li> <li>g. timeliness</li> <li>h. reliability</li> <li>i. communication skills</li> </ol> </li> <li>2. Update researched data on potential employers.</li> <li>3. Review the role of social media in job search.</li> <li>4. Update a sample résumé and cover letter.</li> <li>5. Review the importance of filling out a job application legibly, with accurate and complete information.</li> <li>6. Complete sample job application forms correctly.</li> <li>7. Review the importance of enthusiasm in the interview and on a job.</li> <li>8. Review the importance of appropriate appearance in the interview and on a job.</li> <li>9. Review the importance of the continuous upgrading of job skills.</li> <li>10. Review the importance of customer service as a method of building permanent relationships between the organization and the customer.</li> <li>11. Review and demonstrate appropriate interviewing techniques.</li> <li>12. Review the informational materials and resources needed to be successful in an interview.</li> <li>13. Update a sample follow-up letter.</li> <li>14. Review and demonstrate appropriate follow-up procedures.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 3, 6, 7, 8, 9, 11, 12</p> <p><b>CTE Anchor:</b> Communications: 2.1, 2.3 Career Planning and Management: 3.1, 3.2, 3.3, 3.4 Responsibility and Flexibility: 7.4, 7.7 Ethics and Legal Responsibilities: 8.4 Leadership and Teamwork: 9.4 Demonstration and Application: 11.1, 11.5</p> <p><b>CTE Pathway:</b> D1.1</p>
<p><b>H. ENTREPRENEURIAL SKILLS</b></p> <p>Apply and evaluate the process in becoming an entrepreneur.</p>	<ol style="list-style-type: none"> <li>1. Define entrepreneurship.</li> <li>2. Identify the necessary characteristics of successful entrepreneurs.</li> <li>3. Define the contributions of entrepreneurs to the tile and marble installation industry.</li> <li>4. Explain the purpose and components of a business plan.</li> <li>5. Examine personal goals prior to opening a business.</li> <li>6. Evaluate sources of monetary investment in a business opportunity.</li> <li>7. Define licensing requirements for the tile and marble installation business.</li> <li>8. Develop a scenario depicting the student as the owner of a flooring installation business.</li> <li>9. Differentiate between LEED business practices and standard business practices.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12</p> <p><b>CTE Anchor:</b> Career Planning and Management: 3.2, 3.4, 3.7 Responsibility and Flexibility: 7.1 Leadership and Teamwork: 9.1</p>

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(1 hour)		Demonstration and Application: 11.3, 11.4  <b>CTE Pathway:</b> D1.1, D1.2, D9.2

## ***SUGGESTED INSTRUCTIONAL MATERIALS and OTHER RESOURCES***

### **TEXTS AND SUPPLEMENTAL BOOKS**

The Home Depot. Tiling 1-2-3. Meredith Publishing, 2014.

Black & Decker. Ceramic & Stone Wall & Flooring. Creative Publishing, 2012.

Foster, Viv. Mosaic Tiling. Barron's Publishing, 2006.

### **RESOURCES**

Employer Advisory Board members

Anchor Standards

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

[tiling.net](http://tiling.net)

[mosaicandglass.com](http://mosaicandglass.com)

[tilinginstaller.com](http://tilinginstaller.com)

[marbleandstone.com](http://marbleandstone.com)

[marblesetting.com](http://marblesetting.com)

[www.installertools.com](http://www.installertools.com)

[www.bsc.ca.gov/default.htm](http://www.bsc.ca.gov/default.htm)

[greenbuildingadvisor.com](http://greenbuildingadvisor.com)

[the.dailygreen.com](http://the.dailygreen.com)

### **COMPETENCY CHECKLIST**

## ***TEACHING STRATEGIES and EVALUATION***

### **METHODS AND PROCEDURES**

- A. Shop instruction and application
- B. Lecture and discussion
- C. Demonstration and observation
- D. Multimedia presentations
- E. Individual and group projects
- F. Independent reading
- G. Layout and prep assignments
- H. Workplace simulations
- I. Field trips
- J. 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 with a minimum score of 80% or higher.

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

SECTION D – Waterproofing Review – Pass all assignments and exams on waterproofing with a minimum score of 80% or higher.

SECTION E – Mortar Float – Pass all assignments and exams on mortar float with a minimum score of 80% or higher.

SECTION F – Marble, Polished Stone and Granite Tile Installation – Pass all assignments and exams on marble, polished stone and granite tile installation with a minimum score of 80% or higher.

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

SECTION H – Entrepreneurial Skills – Pass all assignments and exams on entrepreneurial skills 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.

---