

## PERALTA COMMUNITY COLLEGE DISTRICT COURSE OUTLINE

<b>COLLEGE:</b>	Laney College	<b>STATE APPROVAL DATE:</b>	09/26/2010
<b>ORIGINATOR:</b>	Karl Seelbach	<b>STATE CONTROL NUMBER:</b>	CCC000513270
		<b>BOARD OF TRUSTEES APPROVAL DATE:</b>	05/10/2016
		<b>CURRICULUM COMMITTEE APPROVAL DATE:</b>	01/29/2016
		<b>CURRENT EFFECTIVE DATE:</b>	08/22/2016

**DIVISION/DEPARTMENT:** Laney College

**1. REQUESTED CREDIT CLASSIFICATION:**

Credit - Degree Applicable  
Course is not a basic skills course.  
Program Applicable

**2. DEPT/COURSE NO:**

CARP 206

**3. COURSE TITLE:**

High Performance Building

**4. COURSE:** Laney Course  
Updating

**TOP NO.** 0952.10

**5. UNITS:** 3.50

**HRS/WK LEC:** 2.00 Total: 35.00

**HRS/WK LAB:** 5.00 Total: 87.50

**HRS/WK TBA:**

**6. NO. OF TIMES OFFERED AS SELETED TOPIC: AVERAGE ENROLLMENT:**

**7. JUSTIFICATION FOR COURSE:**

To meet construction industry labor needs. There is a high demand for energy efficiency and sustainable building skills in the housing industry.

**8. COURSE/CATALOG DESCRIPTION**

Introduction to home performance, building design and building science: Hands on applications of new materials in the construction industry; integrating advanced framing, energy efficiency and air sealing techniques to traditional building.

**9. OTHER CATALOG INFORMATION**

a. Modular: No If yes, how many modules:

b. Open entry/open exit: No

c. Grading Policy: Both Letter Grade or Pass/No Pass

d. Eligible for credit by Exam: No

e. Repeatable according to state guidelines: No

f. Required for degree/certificate (specify):

New - ECT / Building Performance and Energy Efficiency Certificate of Achievement

g. Meets GE/Transfer requirements (specify):

no

h. C-ID Number: Expiration Date:

i. Are there prerequisites/corequisites/recommended preparation for this course? No

- 10. LIST STUDENT PERFORMANCE OBJECTIVES (EXIT SKILLS):** (Objectives must define the exit skills required of students and include criteria identified in Items 12, 14, and 15 - critical thinking, essay writing, problem solving, written/verbal communications, computational skills, working with others, workplace needs, SCANS competencies, all aspects of the industry, etc.)(See SCANS/All Aspects of Industry Worksheet.)

Students will be able to:

1. Identify energy efficient systems and explain indoor air quality.
2. Design an energy saving program for saving home energy costs.
3. Differentiate health and safety risks associated with materials.
4. Apply advanced techniques to prevent air infiltration.
5. Assess and identify retrofitting needs for energy efficiency.
6. Construct plans for weatherization and energy efficiency benefits.
7. Design different types of insulation profiles and demonstrate correct installation practices.
8. Evaluate duct air leakage and implement corrective measures.
9. Assemble and install weather stripping parts for remediation.
10. Appraise and employ energy efficient building practices.
11. Evaluate new information and materials used in High Performance Building.
12. Demonstrate safe building practices.

- 11A. COURSE CONTENT:** List major topics to be covered. This section must be more than listing chapter headings from a textbook. Outline the course content, including essential topics, major subdivisions, and supporting details. It should include enough information so that a faculty member from any institution will have a clear understanding of the material taught in the course and the approximate length of time devoted to each. There should be congruence among the catalog description, lecture and/or lab content, student performance objectives, and the student learning outcomes. List percent of time spent on each topic; ensure percentages total 100%.

**LECTURE CONTENT:**

1. Introduction to our growing energy needs 5%
2. The Basics of weatherization 12%
3. Basic home construction principles 5%
4. Jobsite safety, tool safety 5%
5. Combustion appliance safety and carbon monoxide testing 5%
6. Ventilation, Attics and air leakage 5%
7. Insulation, attic hatches, vent terminations 5%
8. Basements and crawl spaces 5%
9. Insulation and retrofitting 8%
10. Water heaters / water conservation 5%
11. Windows and weather stripping 8%
12. Doors, weather stripping, threshold and door shoes 5%
13. Water conservation 3%
14. Furnaces principles and filters 5%
15. Lighting retrofitting 3%
16. Caulking 11%
17. Home retro fitting assessment 5%

**11B. LAB CONTENT:**

1. Current energy guidelines and application 6%
2. Home evaluation and assessment 6%
3. Hand and power tool use in basic home construction 11%
4. Application of safety practices on the jobsite 6%
5. Attic inspection and remediation 6%
6. Basement and crawl space retrofitting 6%

7. Trouble shooting doors 6%
8. Window retrofitting 6%
9. Identification and installation of insulation material 11%
10. Wall finishes and repair 5%
11. Caulking application and uses 6%
12. Water heater safety and conservation measures 6%
13. Heating and air conditioning retrofitting 3%
14. Water conservation techniques and application 3%
15. Application of lighting conservation measures 2%
16. Monitoring and testing for efficiency including blower-door testing and duct leakage testing 11%

**12. METHODS OF INSTRUCTION** (List methods used to present course content.)

1. Field Trips
2. Lecture
3. Observation and Demonstration
4. Projects
5. Other (Specify)

Other Methods:

Sample boards Video Hand out Books

**13. ASSIGNMENTS:** 4.00 hours/week (List all assignments, including library assignments. Requires two (2) hours of independent work outside of class for each unit/weekly lecture hour. Outside assignments are not required for lab-only courses, although they can be given.)

Out-of-class Assignments:

Reading Read trade magazines and write reports to present to class. Research Research current building performance standards such as BPI, and Passive House Standards. Computation Be able to do below door testing and infrared cameras evaluations.

ASSIGNMENTS ARE: (See definition of college level):

Primarily College Level

**14. STUDENT ASSESSMENT:** (Grades are based on):

ESSAY (Includes "blue book" exams and any written assignment of sufficient length and complexity to require students to select and organize ideas, to explain and support the ideas, and to demonstrate critical thinking skills.)

COMPUTATION SKILLS

NON-COMPUTATIONAL PROBLEM SOLVING (Critical thinking should be demonstrated by solving unfamiliar problems via various strategies.)

SKILL DEMONSTRATION

MULTIPLE CHOICE

**15. TEXTS, READINGS, AND MATERIALS**

A. Textbooks:

Koel. 2013. *Carpentry Sixth*. American Technical Publishers

\*Date is required: Transfer institutions require current publication date(s) within 5 years of outline addition/update.

B. Additional Resources:

Library/LRC Materials and Services:

The instructor, in consultation with a librarian, has reviewed the materials and services of the College Library/LRC in the subject areas related to the proposed new course

Are print materials adequate? Yes

Are nonprint materials adequate? Yes

Are electronic/online resources available? Yes

Are services adequate? Yes

Specific materials and/or services needed have been identified and discussed. Librarian comments:  
Please provide librarian with list of recent, recommended supplementary(non-textbook) titles to support the curriculum.

C. Readings listed in A and B above are: (See definition of college level):

Primarily college level

**16. DESIGNATE OCCUPATIONAL CODE:**

C - Occupational

**17. LEVEL BELOW TRANSFER:**

Y = Not Applicable

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**SUPPLEMENTAL PAGE**

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Use only if additional space is needed. (Type the item number which is to be continued, followed by "continued."  
Show the page number in the blank at the bottom of the page. If the item being continued is on page 2 of the  
outline, the first supplemental page will be "2a." If additional supplemental pages are required for page 2, they  
are to be numbered as 2b, 2c, etc.)

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