



El Camino College
COURSE OUTLINE OF RECORD – Approved

I. GENERAL COURSE INFORMATION

Subject and Number: Construction Technology 100
Descriptive Title: Building Fundamentals
Course Disciplines: Construction Technology
Division: Industry and Technology

Catalog Description:

This course is an introduction of the fundamentals of the building trades. Topics of instruction include: building codes, construction mathematics, rough framing, and technical information on materials and methods of residential construction. Practical instruction is given in the use of tools and materials through construction laboratory work.

Conditions of Enrollment:

None

Course Length: X Full Term Other (Specify number of weeks):
Hours Lecture: 2.50 hours per week TBA
Hours Laboratory: 5.00 hours per week TBA
Course Units: 4.00

Grading Method: Letter
Credit Status Associate Degree Credit

Transfer CSU: X Effective Date: Prior to July 1992
Transfer UC: No

General Education:
El Camino College:
CSU GE:
IGETC:

II. OUTCOMES AND OBJECTIVES

A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

1. SLO #1 MATERIALS AND METHODS

Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.

2. SLO #2 HEADER MATERIAL

Students will be able to calculate and cut to length of header material.

3. SLO #3 RAFTER DIMENSIONS Students will be able to calculate the dimensions of common rafters.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at <http://www.elcamino.edu/academics/slo/>.

B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)

1. Calculate header and cripple lengths for standard doors and windows.

- Quizzes

2. Identify components in a structural Type V residential.

- Quizzes

3. Construct a standard height wall including doors and windows.

- Field work

4. Compute rafter lengths.

- Objective Exams

5. Step-off rafter lengths using a framing square.

- Performance exams

6. Construct a gable roof structure.

- Performance exams

7. Identify and define a list of construction terms.

- Quizzes

8. Identify and use hand tools common to the construction industry.

- Performance exams

9. Identify and use hand held power tools common to the construction industry

- Performance exams

III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)

| Lecture or Lab | Approximate Hours | Topic Number | Major Topic |
|-----------------------|--------------------------|---------------------|--|
| Lecture | 2.5 | I | BUILDING FUNDAMENTALS OVERVIEW A. Safety instruction B. Employment opportunities |
| Lab | 5 | II | BUILDING FUNDAMENTALS OVERVIEW A. Safety instruction B. Employment opportunities |
| Lecture | 10 | III | GLOSSARY OF CONSTRUCTION TERMS A. Identification of common construction techniques B. Identification of current construction materials C. Print reading |
| Lab | 20 | IV | GLOSSARY OF CONSTRUCTION TERMS A. Identification of common construction techniques B. Identification of current construction materials C. Print reading |
| Lecture | 15 | V | WALL LAYOUT A. Snap lines B. Stud placement C. Header and cripple calculations D. Nailing 1. Schedule 2. Methods |
| Lab | 30 | VI | WALL LAYOUT A. Snap lines B. Stud placement C. Header and cripple calculations D. Nailing 1. Schedule 2. Methods |
| Lecture | 12.5 | VII | WALL CONSTRUCTION A. Corner and channel construction B. Lateral bracing C. Plumb and line operation International D. Residential Code |
| Lab | 25 | VIII | WALL CONSTRUCTION A. Corner and channel construction B. Lateral bracing C. Plumb and line operation International D. Residential Code |
| Lecture | 5 | IX | ROOF FRAMING A. Computing rafter lengths |

| | | | |
|------------------------|-----|---|--|
| | | | B. Using step-off method to find rafter lengths C. Constructing a gable roof |
| Lab | 10 | X | ROOF FRAMING A. Computing rafter lengths B. Using step-off method to find rafter lengths C. Constructing a gable roof |
| Total Lecture Hours | 45 | | |
| Total Laboratory Hours | 90 | | |
| Total Hours | 135 | | |

IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. PRIMARY METHOD OF EVALUATION:

Problem solving demonstrations (computational or non-computational)

B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

Compute, layout, and cut a common rafter. Consult instructor for evaluation.

C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. In a one-to-two page report, compare and contrast the size of framing members in a one story versus a two story residence. Submit report to the instructor.
2. Produce a drawing of a framed rough opening for a standard size interior doorway, using prescribed methods as found in the International Residential Code. Submit drawing to the instructor.

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Performance exams
Objective Exams
Oral exams
Other exams
Quizzes
Written homework
Field work
Class Performance
Homework Problems
Multiple Choice
Completion
Matching Items
True/False

V. INSTRUCTIONAL METHODS

Demonstration
Discussion
Field trips
Group Activities
Guest Speakers
Internet Presentation/Resources
Laboratory
Lecture
Multimedia presentations

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VI. WORK OUTSIDE OF CLASS

Study
Required reading
Problem solving activities

Estimated Independent Study Hours per Week: 5

VII. TEXTS AND MATERIALS

A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

Leonard Koel. CARPENTRY. 6th ed. American Technical Publishers, 2013.
INDUSTRY STANDARD

B. ALTERNATIVE TEXTBOOKS

C. REQUIRED SUPPLEMENTARY READINGS

D. OTHER REQUIRED MATERIALS

Safety glasses
Carpenter's nailing apron
Appropriate shoes for construction work

VIII. CONDITIONS OF ENROLLMENT

A. Requisites (Course and Non-Course Prerequisites and Corequisites)

| Requisites | Category and Justification |
|------------|----------------------------|
|------------|----------------------------|

B. Requisite Skills

| Requisite Skills |
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C. Recommended Preparations (Course and Non-Course)

| Recommended Preparation | Category and Justification |
|-------------------------|----------------------------|
|-------------------------|----------------------------|

D. Recommended Skills

| Recommended Skills |
|--------------------|
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E. Enrollment Limitations

| Enrollment Limitations and Category | Enrollment Limitations Impact |
|-------------------------------------|-------------------------------|
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Course created by Charles Woolever on 09/01/1987.

BOARD APPROVAL DATE:

LAST BOARD APPROVAL DATE: 06/15/2020

Last Reviewed and/or Revised by ROSS DURAND

Date: 11/25/2019

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