

ATCT-2540: ROOF FRAMING III

Cuyahoga Community College

Viewing: ATCT-2540 : Roof Framing III

Board of Trustees:

May 2024

Academic Term:

Fall 2024

Subject Code

ATCT - Appld Indus Tech - Carpentry

Course Number:

2540

Title:

Roof Framing III

Catalog Description:

Introduction to layout procedures and mathematical derivation of rafter lengths found in roofs, having more than one slope and containing various offsets. Includes roofs containing all or part of hexagonal shapes or octagonal shapes. Cutting and fabrication of all rafters is an integral part of course.

Credit Hour(s):

2

Lecture Hour(s):

2

Lab Hour(s):

0

Requisites

Prerequisite and Corequisite

ATCT-1550 Roof Framing I and ATCT-2220 Roof Framing II and departmental approval.

Outcomes

Course Outcome(s):

Layout, cut, fabricate, and install rafters for multiple slope and unequal slope roofs including hexagonal and octagonal shaped roofs according to blueprints.

Objective(s):

1. Demonstrate how to layout a roof with an unequal slope.
2. Demonstrate how to layout a roof with multiple slopes.
3. Determine various check cuts by completing a layout.
4. Describe how to maintain equal wall heights and cornices when installing tail rafters.

Course Outcome(s):

Calculate ridge lengths and hip, valley lengths for unequal slope.

Objective(s):

1. Calculate ridge lengths for unequal slope roofs.
 2. Calculate hip valley lengths for intersecting roofs of unequal slope.
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Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom Participation
4. Completion of assigned projects

Course Content Outline:

1. Concepts
 - a. Types of check cuts including framing square and unit rectangle
 - b. Establish framing point
 - c. Layout procedures
 - d. Establishing a cut list
 - e. Total rise calculations
 - f. Unit triangle calculations
 - g. Hip length calculations
 - h. Slope calculation
 - i. Equal wall height maintenance
 - j. Corner adjustment of hip rafter location
 - k. Framing squares
 - l. Unit rectangles
2. Skills
 - a. Calculating ridge lengths for unequal slopes
 - b. Calculating hip length
 - c. Maintaining equal wall heights and cornices when installing tail rafters
 - d. Adjusting hip rafter location at corner
 - e. Laying out cheek cuts
 - f. Calculating number of cheek cuts needed
 - g. Cutting cheek cuts
 - h. Establishing framing point
 - i. Cutting rafters
 - j. Installing rafters
 - k. Fabricating rafters
3. Issues
 - a. Safety
 - b. Scrapping/Salvaging Material
 - c. Jobsite hazards

Resources

Koel, Leonard. *Carpentry*. 7th ed. Homewood IL: American Technical Publishers, 2021.

Carpenters International Training Fund. *Roof Framing*. Las Vegas, NV: Carpenters International Training Fund, 2017.

Carpenters International Training Fund. *Construction Fall Protection*. Second Edition. Las Vegas NV: Carpenters International Training Fund, 2020.

Resources Other

Carpenters International Training Fund. <https://www.carpenters.org/citf-training/>. 2024

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