

# ATCT-2390: TRUSSED ROOFS

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## Cuyahoga Community College

**Viewing: ATCT-2390 : Trussed Roofs**

**Board of Trustees:**

May 2024

**Academic Term:**

Fall 2024

**Subject Code**

ATCT - Appld Indus Tech - Carpentry

**Course Number:**

2390

**Title:**

Trussed Roofs

**Catalog Description:**

Covers the framing of common roof types using manufactured trusses. Includes reading of truss design and placement drawings, truss design, and layout. Also included will be the erection, bracing and sheathing of trussed roofs and the construction of blind valleys according to installation standards. Fall protection and crane safety will also be an integral part of this course.

**Credit Hour(s):**

2

**Lecture Hour(s):**

2

## Requisites

**Prerequisite and Corequisite**

ATCT-1550 Roof Framing I and departmental approval: enrollment in Carpenter's apprenticeship program.

## Outcomes

**Course Outcome(s):**

Interpret federal Occupational Safety and Health Administration (OSHA) regulations for truss roof installation.

**Objective(s):**

1. Apply the fall protection standard as defined in Standard 1926.451, Subpart L.
2. Apply the Personal Protective Equipment (PPE) standard as found in Standard 1910.132, Subpart I.
3. Utilize the Crane Standard as found in Subpart CC.
4. Operate hand and power tools according to Subpart I.

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**Course Outcome(s):**

Interpret truss drawings and layout plans.

**Objective(s):**

1. Identify common truss types.
2. Define respective terminology used in trussed roofs.
3. Determine truss placement utilizing the truss layout diagram.
4. Interpret truss design drawings for lateral bracing requirements.

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**Course Outcome(s):**

Apply math concepts used to compute ridge and rafter lengths and blind valleys

**Objective(s):**

1. Determine ridge length.
2. Compute blind valley jack rafter lengths.
3. Calculate common rafter total line length.

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**Course Outcome(s):**

Fabricate Trussed Roofs.

**Objective(s):**

1. Layout truss locations according to truss placement diagram.
2. Assemble trusses according to Building Component Safety Information (BCSI) standards.
3. Install blind valleys.
4. Locate bracing according to BSCI Standards for gable and hip trusses.
5. Apply roof sheathing to gables and hip roofs.

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**Methods of Evaluation:**

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

**Course Content Outline:**

1. Safety considerations
  - a. Fall protection
    - i. Low Slope Roofs
    - ii. Steep Slope Roofs
    - iii. Alternate fall protection
  - b. PPE
    - i. Overhead protection
    - ii. Work shoes
  - c. Cranes
    - i. Rigging
    - ii. Signaling
    - iii. Set-Up
  - d. Tools and equipment
    - i. Circular Saw
    - ii. Pneumatic mailers
    - iii. Hand tools
2. Truss drawings
  - a. Truss design drawings
    - i. Gable end trusses
    - ii. Standard trusses
    - iii. Hip trusses
  - b. Terminology
    - i. Compression/ tension webs
    - ii. Top and bottom chords
  - c. Truss placement diagram
    - i. Truss spacing
    - ii. Girder truss location
    - iii. Truss layout
  - d. Truss bracing requirements
    - i. Temporary bracing
    - ii. Permanent bracing
    - iii. Erection bracing

3. Mathematical calculations
  - a. Common rafter total line length
  - b. Ridge length
  - c. Valley jacks
4. Fabrication
  - a. Truss layout
    - i. Truss placement
    - ii. Spacing
    - iii. Bearing points
5. Assembly
  - a. Weather considerations
  - b. Fastening
  - c. BCSI standards
    - i. Bracing requirements
    - ii. Connections
6. Valleys
  - a. Blind
  - b. Framing components
  - c. Jack rafters
7. D. Bracing
  - a. Temporary bracing
  - b. Gable-end bracing
  - c. Permanent bracing
8. E. Sheathing

## Resources

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

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

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Carpenters International Training Fund. *Print Reading 1: Introductory and Intermediate Skills*. Second Edition. Las Vegas, NV: Carpenters International Training Fund, 2022.

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Occupational Safety and Health Administration, United States Department of Labor. *Code of Federal Regulations 1926*. National Safety Compliance, 2022.

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## Resources Other

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

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