# General Construction and Carpentry

Weatherization Energy Auditor Single Family

Learning Objectives

By attending this session, participants will be able to:

* Define residential house construction terminology.
* Recognize characteristics of various types of structural framing.
* Identify different types of foundation, wall, roof, window, and door systems.
* Recognize characteristics of balloon and platform framing.
* Explain the impact that different framing types have on air leakage.
* Review window and door installation processes.

Key Terminology

Air leakage

Awning window

Balloon framing

Box sill

Casement window

**Door casing**

Door stop

Double-hung window

Eave

Glass pane

Glazing

Head jamb

**Hinges**

**Incidental repair**

**Jambs**

Lower sash

Mud sill

Mullions

Panel

Picture window

Platform framing

Rails

Sash

Savings-to-investment ratio (SIR)

Side jamb

Sill

Slider window

Stiles

Thermal break

Thermal transmittance

Threshold

Trim

Upper sash

Window stop

**Supplemental Materials**

Handouts & Resources

Airseal and Insulation Diagram Knee Wall House.

General Construction and Carpentry Quiz.

General Construction and Carpentry Quiz Answer Key.

Lugano, Fred. “First Step in Cellulose Sealing: Spot the Style.” Home Energy May/June 1998. <www.homeenergy.org>.

Morrison, Daniel. “Get the Right Replacement Window.” *Fine Home Building* Oct./Nov. 2004. <www.finehomebuilding.com>.

“Rain Screen Exterior Walls.” Toolbase.org. NAHB Research Center. <www.toolbase.org>.

**Online Platform Lessons**

Use these online interactive training modules as prerequisites before students attend the course, or as in-class computer lab sessions. Users must first create an account at [www.nterlearning.org](http://www.nterlearning.org) to access the lesson.

i- 3.7 Building Variations (Animated Glossary) <https://www.nterlearning.org/web/guest/course-details?cid=249>

i- 6.4 Weatherizing Windows & Doors <https://www.nterlearning.org/web/guest/course-details?cid=249>

Relevant Standard Work Specifications

3.1000 Air Sealing, Attics

3.1202 Air Sealing, Repairing/Replacing Cracked and Broken Glass

3.1203 Air Sealing, Replacement

Classroom Props & Activities

* Small double-hung window unit showing various window components mounted in a framed wall section showing the framing header, sill, and jambs. (Slide 19)
* Downsized door module showing various door components mounted in a framed wall section showing the framing header and jambs. (Slide 30)
* Downsized framing module or a scale model showing foundation, and wall and roof framing components showing balloon and platform framing. (Slide 3)

**Class Overview**

* Make the class as interactive as possible by integrating lecture with lab demonstrations. Don’t rely on PowerPoint illustrations of residential construction components alone. Construct scale or full-sized construction mockups as lab space allows. Use the various three dimensional lab props suggested above to create as much realism as possible. Ask participants to identify the components associated with each by making it part of a lab quiz.
* For additional information on air leakage and insulation strategies for different types of housing stock, framing configuration, and specialized building features, see the chapter titled “Building Retrofit Strategies.”