

## **Introduction to the Weatherization Assistance Program Standardized Training Curricula**

The development of the Weatherization Assistance Program Standardized Training Curricula was prepared as an account of work sponsored by the U.S. Department of Energy. Neither the U.S. Department of Energy nor any of their employees or contractors makes any warranty, express or implied, or assumes any legal responsibility for the accuracy or completeness of any information or process disclosed. Reference herein to any specific commercial product, process, or service by trade name, trademark, and manufacturer or otherwise does not constitute endorsement, recommendation, or favoring by the United States Government or any agency thereof.

The weatherization network is encouraged to adopt and adapt the materials contained in the Curricula to meet network training needs. All resources are provided at no fee.

Instructors should inform students that the curriculum is aligned with NREL Job Task Analyses (JTAs). This version of the Energy Auditor Curriculum has been aligned with the JTAs for the Energy Auditor worker category, ensuring it will meet requirements for the IREC accreditation process and also provide a strong foundation for training to prepare candidates for the National Home Energy Professional worker certifications.

Modules:

- Weatherization Installer/Technician Fundamentals
- Weatherization Installer – Mobile Homes
- Crew Leader
- **Weatherization Energy Auditor – Single Family**
- Weatherization Energy Auditor – Multifamily
- Quality Control Inspector
- Heating Systems for Energy Auditors and Inspectors – Single Family
- Mechanical Systems - Multifamily
- Train the Trainer
- Health & Safety Training for Programmatic Staff
- ASHRAE 62.2

The Weatherization Energy Auditor module was designed to lay the groundwork for new/existing weatherization workers interested in understanding and expanding on their knowledge of weatherization. The scope of an Energy Auditor, as written in the JTAs, is:

An Energy Auditor is a residential energy efficiency professional who evaluates the energy efficiency, health, and safety of a home, and conducts field measurements to identify areas for savings. The Energy Auditor produces this information as a report and makes recommendations to the customer. A committee of SMEs considered to be experts in the field created the Energy Auditor Job Task Analysis.

The materials provided in this module can be delivered by a trained weatherization professional to small and large groups.

This body of work is compiled from many of the building science resources that have been used by weatherization professionals as the “best practices.” Special thanks and recognition is given to the Weatherization Trainers’ Consortium members who conceived the idea to make these materials available to all weatherization trainers. This group has provided invaluable assistance, shared resources and experiences, and provided feedback throughout the process.

For additional information on the materials provided in the Standardized Training Curricula, to provide feedback, and/or to submit additional materials to include in the “Resources” section, contact SMS via email ([info@sms-results.com](mailto:info@sms-results.com)) or telephone (301.299.2977).

*Weatherization Works!*

## How to Use the Curriculum

### The Materials

Each module contains photos of hands-on props where applicable, a Glossary of Key Terminology, and a Master Bibliography that compiles all resources into one document.

A module is broken into chapters, each including a Lesson Plan with prop lists and creative ideas to engage trainees and a PowerPoint Presentation with detailed Speaker Notes.

### Anatomy of a Lesson Plan (LP)

The Lesson Plan is your guide for how to prepare for and conduct the class.

**Learning Objectives** are brief, specific statements about what learners will be able to perform at the conclusion of the lesson.

**Key Terminology** highlights important vocabulary within the lesson.

**Hands-On Props** come with photos and instructions for use.

**Relevant Standard Work Specifications (SWS)** lists details from the Workforce Guidelines that relate to the chapter topic.

**Classroom Props & Activities** suggests materials for show and tell and describes exercises to break up the classroom sessions.

The image shows two pages of a lesson plan document. The left page is titled 'Identifying & Air Sealing the Building Envelope' and includes sections for Learning Objectives, Key Terminology, Supplemental Materials, and On-line Platform Lessons. The right page includes Relevant Standard Work Specifications, Classroom Props & Activities, Hands-On Props, and Class Overview. Blue lines with arrows point from descriptive text blocks to specific sections in both pages.

**On-line Platform Lessons** lists the interactive, game-like modules that can be used to reinforce the subject matter.

**Handouts & Resources** includes magazine articles, worksheets, and videos.

**Supplemental Materials** lists resources in a number of different categories, including the SWSs and On-line Platform. Use these as background reading to prepare for the lesson, to break up class time with videos and games, or as homework reading for the students.

**Class Overview** provides a brief narrative suggesting how to deliver the chapter materials.

**Master Bibliography**

The wealth of materials contained within the LPs ensure thorough coverage of a given topic, but it can get a little confusing when trying to pull the materials together for an entire module. To help stay organized, a Master Bibliography is provided that indicates which resources are suggested for each chapter.

The Master Bibliography is a spreadsheet with four tabs: Master Bibliography (lists books, articles and videos), Relevant Standard Work Specs, On-line Platform Lessons, and JTAs (lists the Job Task Analysis for the worker category). On each tab, the resources are listed along the left, and the chapter names are listed along the top. An “X” indicates where a given resource complements a chapter.

| Title   | 1a. Introduction to | 1b. Safe Work Practices | 1c1. House as a System | 1c2. Building Science Basics | 2. Preparing for the Job | 3. At the Job Site | 5. 3a. Identifying & Air Sealing | 5. 3b. Loose-Fill Insulation: | 5. 3c. Moisture Barriers | 5. 3d. Mechanical Ventilation | 5. 3e. Identifying Mechanical | 5. 3f. Combustion Safety | 5. 3g. Dense-Pack Sidewall | 5. 3h. Windows and Doors | 5. 3i. Electrical Safety in the | 5. 3j. Plumbing Overview | 5. 3k. Roofing, Flashing, and | 5. 3l. Spray Foam Insulation |
|---|---------------------|-------------------------|------------------------|------------------------------|--------------------------|--------------------|----------------------------------|-------------------------------|--------------------------|-------------------------------|-------------------------------|--------------------------|----------------------------|--------------------------|---------------------------------|--------------------------|-------------------------------|------------------------------|
| "12 Steps to Lead Safety." <i>WxTV</i> . Montana Weatherization Training Center. <www.wxtonline.org>.                                 | X                   |                         |                        |                              | X                        |                    |                                  |                               |                          |                               |                               |                          |                            | X                        |                                 |                          |                               |                              |
| 2009 Weatherization Works Video   | X                   |                         |                        |                              |                          |                    |                                  |                               |                          |                               |                               |                          |                            |                          |                                 |                          |                               |                              |
| "Accessing Stucco Walls for Dense Packing." <i>WxTV</i> . Montana Weatherization Training Center. <www.wxtonline.org>.                |                     |                         |                        |                              |                          |                    |                                  |                               |                          |                               |                               |                          |                            | X                        |                                 |                          |                               |                              |
| "Additional Siding Removal." <i>Weatherization Tech Exchange</i> . Energy Center of Wisconsin. <www.ecw.org>.                         |                     |                         |                        |                              |                          |                    |                                  |                               |                          |                               |                               |                          |                            | X                        |                                 |                          |                               |                              |
| Air Sealing Prop Guide.   |                     |                         |                        |                              |                          |                    | X                                |                               |                          |                               |                               |                          |                            |                          |                                 |                          |                               |                              |
| Air Seal and Insulation Diagram Knee Wall House   |                     |                         |                        |                              |                          |                    | X                                |                               |                          |                               |                               |                          |                            |                          |                                 |                          |                               |                              |
| Aleshire, Vic. "Crawl Space Solutions." <i>Home Energy</i> May/June 2004: 27-29. <www.homeenergy.org>.                                |                     |                         |                        |                              |                          |                    |                                  | X                             |                          |                               |                               |                          |                            |                          |                                 |                          |                               | X                            |
| Aleshire, Vic. "Handbook for Foam Products." <i>Mid-Atlantic Weatherization Training Conference</i> . 2002. <www.waptac.org>.         |                     |                         |                        |                              |                          |                    |                                  |                               |                          |                               |                               |                          |                            |                          |                                 |                          |                               | X                            |
| "A Look Inside a Wall: Dense Packing." <i>WxTV</i> . Montana Weatherization Training Center. <www.wxtonline.org>.                     |                     |                         |                        |                              |                          |                    |                                  |                               |                          |                               |                               |                          |                            | X                        |                                 |                          |                               |                              |
| Applicable Codes, or sections thereof   |                     |                         |                        |                              |                          |                    |                                  |                               |                          |                               |                               |                          |                            |                          |                                 |                          |                               | X                            |
| Armanda, Larry. "Ventilation Strategies in Weatherization." <i>WTC Technical Update</i> 1.8 (2006). Weatherization Training Center at |                     |                         |                        |                              |                          |                    |                                  |                               |                          | X                             |                               |                          |                            |                          |                                 |                          |                               |                              |

In preparation for delivering a chapter, use either the LP or this spreadsheet to determine which supplemental materials you will use in the class.

The JTAs tab is especially useful if you are mixing your own curriculum with some chapters from the standardized curriculum. Once you’ve assessed your existing curriculum to determine which JTAs are not addressed, you can simply go to the JTAs tab, find the corresponding domain and task in the left column, and pull a specific chapter from the standardized curriculum that addresses that JTA (as indicated by an “X”).

**Power Point Presentations (PPTs)**

A wise instructor once gave this training advice: “Tell them what you’re going to tell them, tell them, then tell them what you told them.” The PPTs follow this advice. Each begins with the same learning objectives as are listed in the chapter LP, addresses those learning objectives within the body of the PPT, and ends with a summary slide recapping the materials that were covered.

Speaker notes accompany each slide. These notes are written as a script, but naturally it is best if you liven the presentation with anecdotes and convey the information in a more personal way. It is not recommended that instructors simply read the notes to the class.

**PPT Speaker Notes**

*First use of key terminology is written like this.*

This is a reminder for the instructor to explain the meaning of the word or phrase to the class, who may be hearing it for the first time.

*Questions for the class and potential answers, or guidance for class interactivity, is written like this.*

This style indicates that the instructor should seek student interaction and guides them in doing so either through the use of related questions or by instructing them to distribute handouts or begin a class exercise that is outlined in the corresponding LP.

**Glossary**

The Glossary includes definitions for all key terminology and acronyms used throughout the module, listed in alphabetical order. Use this as a reference before teaching, and as a handout for class participants to reference during class.

## **Tips for the Trainer**

The curriculum is intended to provide you with all the materials and guidance necessary to deliver a high-quality, effective training. Even so, there is no substitute for a knowledgeable, engaging instructor who has adequately prepared for the class. Follow these steps to ensure a successful training session:

### **Review and Revise**

In preparation for delivering a given chapter, review all the materials provided to become familiar with the subjects being covered. Go through the PPT and add notes where you wish to expand upon certain topics or integrate learning activities not already included. Where applicable, swap out graphics and photos with more regionally-specific images that will speak directly to the audience being trained.

### **Stock the Classroom and Lab**

Once you have made any adjustments to the materials, use the LP as a shopping list. Bring the materials listed under “Classroom Props and Activities” into the classroom so they will be on hand to pass around or demonstrate at the appropriate time during the lesson. If you are unfamiliar with certain props, practice beforehand to gain experience so you will deliver with confidence.

If hands-on props are to be used in the lab, use the photos as a guide for building props and double check that you’ll have all necessary materials on hand for students to work on the props.

### **Familiarize Yourself with the Supplemental Materials**

Review the suggested articles, videos, and handouts to determine which you plan to use in the class. Determine where videos will be shown during the presentation. Log into the On-line Platform, and review those materials, too. Determine which you will use as pre-requisites (students access those lessons before coming to class) and which will be used as computer lab exercises—perhaps as part of a small-group circuit, including hands-on props and written evaluations.

### **Generate a Course Schedule**

Once you are familiar with the materials you will present, and the exercises and classroom activities you will have students participate in, generate a course schedule showing which chapters you will cover on each day, and the estimated time the topic will take. The chapters are listed in what the authors considered a logical order for presentation, but feel free to move things around as needed to suit your audience.

This schedule serves two functions: it informs students what to expect of the course, and it helps keep instructors on track to cover all materials within the allotted time.

### **Prepare the Students**

Set your students up for success by preparing them for the class. Inform them of the proper dress code (e.g., work clothes, if you are planning to get dirty), and send a list of materials they will need to bring—typically pen/pencil and calculator, but sometimes includes certain hand-tools depending on the training venue.

If you plan to use the On-line Platform lessons, have them go to <https://www.nterlearning.org/> and register as users. If this is difficult for some potential attendees due to lack of internet access, you may need to register them ahead of time and provide them with their log-in info once they arrive at the training.

