

## **COURSE DESCRIPTION**

### **Introduction to Green Weatherization/Awareness & Hands-On Training**

This course is designed for individuals who will be engaged in the hands-on application of green weatherization. The course focuses on providing trainees with a broad understanding of the concepts and processes of green weatherization materials and application techniques. It is intended to be taught after the completion of the 40-hour Introduction to Green Building and Weatherization Awareness course. This course may also be taught as a 32-hour hands-on green weatherization. It is designed for comprehension at the 8<sup>th</sup> grade literacy level, and is a combination of lectures, videos and hands-on exercises.

The course is divided into eight sections: Section 1 – Weatherization Refresher; Section 2 – Mold Awareness; Section 3 – Exterior Caulking and Sealing; Section 4 – Weatherstripping Doors and Windows; Section 5 – Foaming and Caulking Envelope Penetrations; Section 6 – Installing Insulation; Section 7 – Electrical Outlet Gasket Installation; and Section 8 – Radiant Barrier Installation.

The package of materials available to teach this course includes: PowerPoint® presentations with embedded videos, job sheets, weatherization review test, and a case study. The course curriculum and associated participant manual can be found at:

[www.workforcegreen.com/curriculum.html](http://www.workforcegreen.com/curriculum.html)

The instructor materials and resources are password protected at [www.workforcegreen.com](http://www.workforcegreen.com) but can be accessed via contacting CPWR-The Center for Construction Research and Training MWTP Consortium by e-mailing [jwrepka@neworleanscarpenters.org](mailto:jwrepka@neworleanscarpenters.org).

**Topics Include:** Weatherization Refresher, Mold Awareness, Exterior Caulking and Sealing, Weatherstripping Doors and Windows, Foaming and Caulking Envelope Penetrations, Installing Insulation, Electrical Outlet Gasket Installation, and Radiant Barrier Installation

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

<b>GENERAL INFORMATION</b>	
<b>Number of Hours</b>	40
<b>Regulatory Requirements (State or Federal)</b>	None
<b>Course Prerequisites (if any)</b>	Introduction to Green Building & Weatherization Awareness
<b>Training Provider Accreditation</b>	N/A
<b>NIEHS Compliant</b>	N/A
<b>INSTRUCTOR QUALIFICATIONS</b>	
<b>Experience/Background of Instructor</b>	Strong experiential and/or educational background in subject matter; journey person carpentry or general construction certification preferred.
<b>Certifications/Registration</b>	N/A
<b>TRAINING DELIVERY ( appropriate to target audience and learning objectives)</b>	
<b>Student/Instructor Ratio (maximum)</b>	Lecture 8:1 Hands-On 8:1
<b>Lectures/Presentations</b>	20%
<b>Classroom/Demonstration Activities</b>	15%
<b>Hands-On Activities</b>	65%
<b>FACILITIES SUFFICIENCY REQUIREMENTS</b>	
<b>Lecture</b>	Room must be able to accommodate all students, 1 instructor, and laptop, projector, VCR/DVD, internet connection

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FACILITIES SUFFICIENCY REQUIREMENTS	
Hands-On	<ul style="list-style-type: none"> <li>• Carpentry shop; 30 x 30 ft. open space; 1- wall mock-up with: doors and windows, exterior sheathing and siding, open interior stud wall with outlet boxes, light switch boxes, and electrical wiring; 1 – wall mock-up with outlet and switch boxes, exterior sheathing and interior finished with drywall; 1 – L-shaped roof with one gable end and one hip; Low or no VOC Caulk Cartridge; Utility Knife; Caulk Gun, Long/Stiff Wire; Open-Cell Foam Backer Rod; Painter’s 5-in-1 Tool or Putty Knife; Painter’s Masking tape (optional); Water-Based Low or no VOC Caulk/ Sealant Remover; Protective Gloves; Tape Measure; Screw Driver; Tin Snips; Hack saw; Hammer; Self-Adhesive Foam Weatherstripping; V-Channel Weatherstripping; Door Sweep; Finish Nails; Screws; Bucket of Water and Washing Detergent; Petroleum Jelly; Door and Window Weatherstripping Kits; Hand Broom; Ladder; Nail Set; Pry Bar; Painter’s Drop Cloth; Safety Goggles; Dust mask; Poly Vapor Barrier; Barrier Seaming Tape; Recycled Cotton Insulation; Electrical Outlet Foam Gaskets; Electrical Tester; Radiant Barrier; Radiant Barrier Seaming Tape; Hard Hat</li> </ul>

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

### OVERALL COURSE OBJECTIVES

ENABLING OBJECTIVES		IMPACT OBJECTIVES	
<p><b>The student will</b></p> <ol style="list-style-type: none"> <li>1. discover the benefits of weatherization;</li> <li>2. discover the harmful affects of mold on individuals and the destructive affects of mold on structures;</li> <li>3. discover the uses and application methods of exterior caulking and sealing;</li> <li>4. discover the uses and application methods of weatherstripping doors and windows;</li> <li>5. discover the uses and application methods of foaming and caulking envelope penetrations;</li> <li>6. discover the uses and application methods of installing insulation;</li> <li>7. discover the uses and application methods of electrical outlet gasket installation; and</li> <li>8. discover the uses and application methods of radiant barrier installation.</li> </ol>		<p><b>The student must</b></p> <ol style="list-style-type: none"> <li>1. identify the benefits of weatherization;</li> <li>2. identify the causes of mold and techniques for remediation;</li> <li>3. apply application methods of exterior caulking and sealing;</li> <li>4. apply application methods of weatherstripping doors and windows;</li> <li>5. apply application methods of foaming and caulking envelope penetrations;</li> <li>6. apply application methods of installing insulation;</li> <li>7. apply application methods of electrical outlet gasket installation; and</li> <li>8. apply application methods of radiant barrier installation.</li> </ol>	
DELIVERY METHODS			
<p><b>Lecture:</b> Weatherization Refresher</p> <p>Mold Awareness <b>Lecture &amp; Hands-On</b> Exterior Caulking &amp; Sealing</p> <p>Weatherstripping Doors &amp; Windows</p> <p>Foaming &amp; Caulking Envelope Penetrations</p> <p>Electrical Outlet Gasket Installation</p> <p>Radiant Barrier Installation</p>	<p><b>Classroom Activities:</b> View PowerPoint® presentation, videos, case study, job sheets, discussion questions</p>	<p><b>Q/A, Group Discussions</b> Group Discussions</p>	<p><b>Hands-On Activities:</b></p> <p>Use job sheets to perform hands-on tasks.</p>

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

DELIVERY METHODS			
MATERIALS			
<p><b>Lecture:</b></p> <p>PowerPoint® Presentation, Computer, Internet connection, AV Equipment projector/screen/VCR/DVD</p>	<p><b>Classroom Activities:</b></p> <p>Black Board Chalk Tables/Chairs</p>	<p><b>Q/A, Group Discussions</b></p> <p>Case Study Hand-Out Job Sheets Pens/Pencils/Paper</p>	<p><b>Hands-On Activities:</b></p> <ul style="list-style-type: none"> <li>• 1- wall mock-up with: doors and windows, exterior sheathing and siding, open interior stud wall with outlet boxes, light switch boxes, and electrical wiring; 1 – wall mock-up with outlet and switch boxes, exterior sheathing and interior finished with drywall; 1 - L-shaped roof with one gable end and one hip;</li> <li>• Low or no VOC Caulk Cartridge;</li> <li>• Utility Knife;</li> <li>• Caulk Gun;</li> <li>• Long/Stiff Wire;</li> <li>• Open-Cell Foam Backer Rod;</li> </ul>

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			<ul style="list-style-type: none"><li>• Painter's 5-in-1 Tool or Putty Knife;</li><li>• Painter's Masking tape (optional);</li><li>• Water-Based, Low or no VOC Caulk/ Sealant Remover;</li><li>• Protective Gloves;</li><li>• Tape Measure;</li><li>• Screw Driver;</li><li>• Tin Snips;</li><li>• Hack saw;</li><li>• Hammer;</li><li>• Self-Adhesive Foam Weatherstrip ping;</li><li>• V-Channel Weatherstrip ping;</li><li>• Door Sweep;</li><li>• Finish Nails;</li><li>• Screws;</li><li>• Bucket of Water and Washing Detergent;</li><li>• Petroleum Jelly;</li><li>• Door and Window Weatherstrip ping Kits;</li><li>• Hand Broom;</li></ul>
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**Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum**

			<ul style="list-style-type: none"><li>• Ladder;</li><li>• Nail Set;</li><li>• Pry Bar</li><li>• Painter’s Drop Cloth;</li><li>• Safety Goggles;</li><li>• Dust mask;</li><li>• Poly Vapor Barrier;</li><li>• Barrier Seaming Tape;</li><li>• Recycled Cotton Insulation;</li><li>• Electrical Outlet Foam Gaskets;</li><li>• Electrical Tester;</li><li>• Radiant Barrier;</li><li>• Radiant Barrier Seaming Tape;</li><li>• Hard Hat</li></ul>
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# Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

## LESSON PLAN

### SECTION 1 – Weatherization Refresher

LEARNING OBJECTIVES	DELIVERY METHODS	MATERIALS
<ul style="list-style-type: none"><li>• To discover the benefits of weatherization; and</li><li>• To learn the materials and application methods of weatherization technology</li></ul>	<ul style="list-style-type: none"><li>• View PowerPoint® presentation</li><li>• View Videos</li><li>• Group Discussion</li></ul>	<ul style="list-style-type: none"><li>• Sign-in sheets</li><li>• PowerPoint® handouts</li></ul>



#### **Lecture: Introduction to Weatherization (30 min)**

Utilize PowerPoint® presentation to provide an introduction to weatherization.



#### **Lecture: Energy Audit Tools (15 min)**

Utilize PowerPoint® presentation to explain what energy audits are and how they are used in the weatherization process.



#### **Lecture: Whole-House Weatherization (15 min)**

Utilize PowerPoint® presentation to introduce the concept of whole-house weatherization.



#### **Activity: Blower Door Video (30 min)**

View video on blower doors embedded in PowerPoint® presentation.



#### **Lecture: Whole-House Weatherization (30 min)**

Utilize PowerPoint® presentation to introduce the concepts of sealing and thermal envelope and to cover heating and cooling systems.



## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum



### **Lecture: Types of Insulation (75 min)**

Utilize PowerPoint® presentation to introduce the different types of insulation such as blanket, concrete block, foam board, loose-fill, vermiculite/perlite, reflective, rigid fiber board, and liquid foam insulation.



### **Activity: Q&A (15 min)**

Field questions from participants.



### **Activity: Section Review (30 min)**

Use PowerPoint® to ask students multiple choice section review questions. Show/tell students correct answers. Use discussion questions for classroom discussion.

# Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

## LESSON PLAN

### SECTION 2 – Mold Awareness

LEARNING OBJECTIVES	DELIVERY METHODS	MATERIALS
<ul style="list-style-type: none"><li>• To discover what mold is; and</li><li>• To discover the harmful affects of mold on people and structures</li></ul>	<ul style="list-style-type: none"><li>• View PowerPoint® presentation</li><li>• View Videos</li><li>• Group Discussion</li></ul>	<ul style="list-style-type: none"><li>• Sign-in sheets</li><li>• Case study handout</li><li>• PowerPoint® handouts</li></ul>



#### Lecture: Mold Awareness (30 min)

Utilize PowerPoint® presentation slides to introduce the concept of mold infestation.



#### Activity: Mold Identification & Remediation Video (60 min)

View video on mold identification and remediation.



#### Activity: Case Study (60 min)

Instruct trainees to read case study hand-out and conduct group discussion.



#### Lecture: Mold Prevention (45 min)

Utilize PowerPoint® presentation slides to introduce the concept of mold prevention.



#### Activity: Q&A (15 min)

Field questions from participants.



#### Activity: Section Review (30 min)

Use PowerPoint® to ask students multiple choice section review questions. Show/tell students correct answers. Use discussion questions for classroom discussion.

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

### LESSON PLAN

#### SECTION 3 – Exterior Caulking & Sealing

LEARNING OBJECTIVES	DELIVERY METHODS	MATERIALS
<ul style="list-style-type: none"> <li>• To learn how to read a job sheet</li> <li>• To discover the materials used for exterior caulking and sealing; and</li> <li>• To learn the application methods of exterior caulking and sealing</li> </ul>	<ul style="list-style-type: none"> <li>• Job Sheet Review</li> <li>• View Videos</li> <li>• Hands-on Application</li> </ul>	<ul style="list-style-type: none"> <li>• Sign-in sheets</li> <li>• Job Sheets</li> <li>• Low or no VOC Caulk Cartridge</li> <li>• Utility Knife</li> <li>• Caulk Gun</li> <li>• Long, Stiff Wire</li> <li>• Open-Cell Foam Backer Rod</li> <li>• Painter’s 5-in-1 Tool or Putty Knife</li> <li>• Painter’s Masking tape (optional)</li> <li>• Water-Based Low or no VOC Caulk/Sealant Remover</li> <li>• Protective Gloves</li> <li>• Wall mock-up with: doors and windows, exterior sheathing and siding, open interior stud wall with outlet boxes, light switch boxes, and electrical wiring</li> </ul>



#### Lecture: Introduction to Exterior Caulking and Sealing (60 min)

Review job sheet and use of materials.



#### Activity: View Exterior Caulking and Sealing Video (30 min)

View Video.

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum



### **Activity: Q & A (20 min)**

Field questions from trainees on job sheet instructions and proper use of materials.



### **Activity: Hands-on Application (3 hrs. 30 min)**

Have trainees use job sheets to conduct hands-on application of exterior caulking and sealing project. Monitor trainee progress for correct application.



### **Activity: Job Review and Q & A (30 min)**

Review completed trainee projects for correct application. Field questions from trainees.

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

### LESSON PLAN

#### SECTION 4 – Weatherstripping Doors and Windows

LEARNING OBJECTIVES	DELIVERY METHODS	MATERIALS
<ul style="list-style-type: none"> <li>• To discover the materials used for weatherstripping doors and windows; and</li> <li>• To learn the application methods of weatherstripping doors and windows</li> </ul>	<ul style="list-style-type: none"> <li>• Job Sheet Review</li> <li>• View Videos</li> <li>• Hands-on Application</li> </ul>	<ul style="list-style-type: none"> <li>• Sign-in sheets</li> <li>• Job Sheets</li> <li>• Door and window weatherstripping kit</li> <li>• Tape Measure</li> <li>• Screw Driver</li> <li>• Tin Snips</li> <li>• Utility knife</li> <li>• Hack saw</li> <li>• Hammer</li> <li>• Self-Adhesive Foam Weatherstripping</li> <li>• V-Channel Weatherstripping</li> <li>• Door Sweep</li> <li>• Finish Nails</li> <li>• Screws</li> <li>• Bucket of Water and Washing Detergent</li> <li>• Petroleum Jelly</li> <li>• Wall mock-up with: doors and windows, exterior sheathing and siding, open interior stud wall with outlet boxes, light switch boxes, and electrical wiring</li> </ul>



#### Lecture: Introduction to Weatherstripping Doors and Windows (30 min)

Review job sheet and use of materials.

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**Activity: View Weatherstripping Doors and Windows Video (30 min)**  
View Video.



**Activity: Q & A (20 min)**  
Field questions from trainees on job sheet instructions and proper use of materials.



**Activity: Hands-on Application (3 hrs. 30 min)**  
Have trainees use job sheets to conduct hands-on application of weatherstripping doors and windows project. Monitor trainee progress for correct application.



**Activity: Job Review and Q & A (30 min)**  
Review completed trainee projects for correct application. Field questions from trainees.

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

### LESSON PLAN

#### SECTION 5 – Foaming and Caulking Envelope Penetrations

LEARNING OBJECTIVES	DELIVERY METHODS	MATERIALS
<ul style="list-style-type: none"> <li>To discover the materials used for foaming and caulking envelope penetrations; and</li> <li>To learn the application methods of foaming and caulking envelope penetrations</li> </ul>	<ul style="list-style-type: none"> <li>Job Sheet Review</li> <li>View Videos</li> <li>Hands-on Application</li> </ul>	<ul style="list-style-type: none"> <li>Sign-in sheets</li> <li>Job Sheets</li> <li>Low or no VOC Caulk Cartridge</li> <li>Caulk Gun</li> <li>Low or no VOC Expanding Foam Sealant</li> <li>Finish Nails</li> <li>Hammer</li> <li>Screwdriver</li> <li>Protective Gloves</li> <li>Serrated or Utility Knife</li> <li>Hand Broom</li> <li>Ladder</li> <li>Nail Set</li> <li>Pry Bar</li> <li>Painter’s Drop Cloth</li> <li>Safety Goggles</li> <li>Wall mock-up with outlet and switch boxes, exterior sheathing and interior finished with drywall</li> </ul>



#### Lecture: Introduction to Foaming and Caulking Envelope Penetrations (30 min)

Review job sheet and use of materials.



#### Activity: View Foaming and Caulking Envelope Penetrations Video (30 min)

View Video.

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum



### **Activity: Q & A (20 min)**

Field questions from trainees on job sheet instructions and proper use of materials.



### **Activity: Hands-on Application (3 hrs, 30 min)**

Have trainees use job sheets to conduct hands-on application of foaming and caulking envelope penetrations project. Monitor trainee progress for correct application.



### **Activity: Job Review and Q & A (30 min)**

Review completed trainee projects for correct application. Field questions from trainees.



# Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

## LESSON PLAN

### SECTION 6 – Installing Insulation

LEARNING OBJECTIVES	DELIVERY METHODS	MATERIALS
<ul style="list-style-type: none"> <li>To discover the materials used for installing insulation; and</li> <li>To learn the application methods of installing insulation</li> </ul>	<ul style="list-style-type: none"> <li>Job Sheet Review</li> <li>View Videos</li> <li>Hands-on Application</li> </ul>	<ul style="list-style-type: none"> <li>Sign-in sheets</li> <li>Job Sheets</li> <li>Recycled cotton insulation</li> <li>Dust mask</li> <li>Poly Vapor Barrier</li> <li>Barrier Seaming Tape</li> <li>Utility knife</li> <li>Tape Measure</li> <li>Staple Gun</li> <li>Staples</li> <li>Wall mock-up with: doors and windows, exterior sheathing and siding, open interior stud wall with outlet boxes, light switch boxes, and electrical wiring</li> </ul>



#### Lecture: Introduction to Installing Insulation (30 min)

Review job sheet and use of materials.



#### Activity: View Installing Insulation Video (30 min)

View Video.



#### Activity: Q & A (20 min)

Field questions from trainees on job sheet instructions and proper use of materials.

## Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum



### **Activity: Hands-on Application (3 hrs, 30 min)**

Have trainees use job sheets to conduct hands-on application of installing insulation project. Monitor trainee progress for correct application.



### **Activity: Job Review and Q & A (30 min)**

Review completed trainee projects for correct application. Field questions from trainees.

# Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

## LESSON PLAN

### SECTION 7 – Electrical Outlet Gasket Installation

LEARNING OBJECTIVES	DELIVERY METHODS	MATERIALS
<ul style="list-style-type: none"> <li>To discover the materials used for Electrical Outlet Gasket Installation; and</li> <li>To learn the application methods of Electrical Outlet Gasket Installation</li> </ul>	<ul style="list-style-type: none"> <li>Job Sheet Review</li> <li>View Videos</li> <li>Hands-on Application</li> </ul>	<ul style="list-style-type: none"> <li>Sign-in sheets</li> <li>Job Sheets</li> <li>Screwdriver</li> <li>Electrical Outlet Foam Gaskets</li> <li>Electrical Tester</li> <li>Wall mock-up with outlet and switch boxes, exterior sheathing and interior finished with drywall</li> </ul>



#### Lecture: Introduction to Electrical Outlet Gasket Installation (30 min)

Review job sheet and use of materials.



#### Activity: View Electrical Outlet Gasket Installation Video (30 min)

View Video.



#### Activity: Q & A (20 min)

Field questions from trainees on job sheet instructions and proper use of materials.



#### Activity: Hands-on Application (3 hrs, 30 min)

Have trainees use job sheets to conduct hands-on application of installing insulation project. Monitor trainee progress for correct application.



#### Activity: Job Review and Q & A (30 min)

Review completed trainee projects for correct application. Field questions from trainees.

# Introduction to Green Weatherization/Awareness - (Hands-On) Curriculum

## LESSON PLAN

### SECTION 8 – Radiant Barrier Installation

LEARNING OBJECTIVES	DELIVERY METHODS	MATERIALS
<ul style="list-style-type: none"><li>• To discover the materials used for radiant barrier installation; and</li><li>• To learn the application methods of radiant barrier installation</li></ul>	<ul style="list-style-type: none"><li>• Job Sheet Review</li><li>• View Videos</li><li>• Hands-on Application</li></ul>	<ul style="list-style-type: none"><li>• Sign-in sheets</li><li>• Job Sheets</li><li>• Radiant Barrier</li><li>• Radiant Barrier Seaming Tape</li><li>• Hard Hat</li><li>• Utility Knife</li><li>• Staple Gun</li><li>• 5/15” Staples</li><li>• Scissors or Utility Knife</li><li>• L-shaped roof with one gable end and one hip</li></ul>



#### **Lecture: Introduction to Radiant Barrier Installation (30 min)**

Review job sheet and use of materials.



#### **Activity: View Radiant Barrier Installation Video (30 min)**

View Video.



#### **Activity: Q & A (20 min)**

Field questions from trainees on job sheet instructions and proper use of materials.



#### **Activity: Hands-on Application (3 hrs, 30 min)**

Have trainees use job sheets to conduct hands-on application of radiant barrier installation project. Monitor trainee progress for correct application.



#### **Activity: Job Review and Q & A (30 min)**

Review completed trainee projects for correct application. Field questions from trainees.