

Facility Systems and Maintenance Worker Program Basic Weatherization Syllabus

Time: 8 hours

Maximum Class Size: 6

Prerequisites: None

Course Description: The eight-hour Basic Weatherization course is part of the Facility Systems & Maintenance Worker program. This course is designed to give the participant a basic understanding of Building Science, the Building Envelope, and the Whole House approach. Participants will learn to analyze the energy efficiency of cooling and heating systems and lighting and ventilation systems. By studying and assessing these systems, the participant will be able to identify which systems are faulty or inefficient, and which require repairs and/or replacements. Studying these components will also address a number of other issues related to building performance and consumer satisfaction, including achieving an even temperature in a building throughout the year. The participant will learn to gather information about various characteristics of the building and develop and implement an action plan based on that analysis. In addition, the participant will receive hands-on practice of weatherization techniques including caulking doors and windows.

Goals/Objectives/Student Learning Outcomes:

- Describe what is meant by the “Whole House” approach to Weatherization
- Describe how energy systems work including: Hot water, ventilation, air conditioning, and heating systems
- Describe how energy and energy conservation principles work
- Describe the “Thermal Envelope”
- Describe the “Pressure Envelope”
- Describe the insulation material
- Identify and demonstrate the proper use of PPE necessary when insulating a building
- Describe materials used in new building construction that helps seal a building
- Describe the importance of proper ventilation in a building
- Locate leak areas in a building
- Use various products to seal leak areas in a building
- Weatherize windows and doors

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Standards

- The California Green Building Standard Codes
- California Code of Regulations Section 505, 506, 508 & 608
- Career Technical Education Framework for California
- Building Trades and Construction Industry Sector
- Career Planning and Management Sector 3.1
- Leadership and Teamwork Sector 9.3
- Demonstration and Application Sector 11.0
- Pathway Standards BTC D1.0-3.10 & %0

Classroom Rules and Procedures

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am
- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE

Textbooks/Readings/Materials

- LIUNA Weatherization Technician/Installer IG/PG
- Weatherization PowerPoint (Building Insulation & Sealing)
- Hand-outs (30 available from LIUNA Weatherization module)
- Basic Weatherization Exit Exam
- Basic Weatherization Hands-On Assessment

Tools/Equipment/Other Materials

- Hammers
- Lineman pliers
- 25' measuring tape
- Utility knives
- Chisels
- Insulation materials
- Caulking materials.

Personal Protective Equipment

- 6 pairs of gloves
- 6 pairs of safety glasses

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- 6 pairs of ear plugs
- 6 hard hats with attached earmuffs
- 6 safety vests
- 8 dust masks
- 6 Tyvek suits
- 6 respirators

Course Requirements

In order to receive credit for the course, participants must:

- Be present for full eight hours
- Participate in all classroom exercises
- Pass a written exam
- Pass a hands-on exam

Course Policies

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment
- Participants who are on “light duty” are not allowed to take this course due to the physically demanding requirements.

Assessment and Grading

Participants will be assessed on the following:

- All written exams must be passed with a score of 80% or above.
- All hands-on exercises for each power tool are graded on performance and participation. They are pass/fail and must be passed with a score of 80% or above.

Safety

Failure to maintain and use PPE may result in dismissal from the course.