

Louisiana Housing Corporation

Home Energy Professional Energy Auditor Course Syllabus

Course Overview

The Energy Auditor Course provides instruction on professionalism in the field, building science, required energy and measurement calculations required for home assessment, home assessment procedures, and energy modeling basics. The course aligns with the HEP Energy Auditor program technical standards as outlined by the DOE and the National Renewable Energy Laboratory (NREL).

The course has been created in alignment with the Energy Auditor Job Task Analysis (JTA) supported by the Department of Energy, which is included in the course materials.

Participants will have to receive passing scores on the written and field exams as given through the Building Performance Institute (BPI) in order to earn the Energy Auditor Certification. The course includes assessments and instruction designed to prepare students for these exams and to deliver correct implementation of the required tasks as an Energy Auditor.

Course Details

Course Title: HEP Energy Auditor Course
Course Location: LHC Training Center; Baton Rouge, LA
Course Schedule: Monday-Friday 8:00am – 4:00pm
Prerequisites: Field/Education requirements as listed <https://bit.ly/3K1Mv9Q>
Course Cost: \$2,300.00

Staff Directory

Instructor: Pam Lewandowski, Training Coordinator
PLewandowski@lhc.la.gov
225-754-1474

Proctor: Chris Dunn, Program Administrator
CDunn@lhc.la.gov
225-754-1443

Director: Todd Folse, Compliance Director
TFolse@lhc.la.gov
225-754-1484

Alternate Instructors: Rick Carraway, Supervisor
RCarraway@lhc.la.gov

Rhett Boudreaux, BA
RBoudreaux@lhc.la.gov

Energy Auditor Course Learning Objectives

Upon completion of the course, participants will:

1. Be able to conduct themselves professionally while practicing adequate safety measures as demonstrated in the field practice activity
2. Successfully collect information about and calculate energy consumption as demonstrated on quiz questions
3. Be able to conduct the Energy Audit process by examining the building and collecting required information correctly as shown in the field practice activity
4. Know how building science relates to the building envelope and the operating appliances in the home as demonstrated on quiz questions
5. Know how to assess the Building Envelope, Thermal Conditions, and Moisture Conditions and make recommendations for improvement as demonstrated on quiz questions and in the field practice activity
6. Be able to use equipment to properly diagnose areas of inefficiency as shown in the field practice activity
7. Know how to identify mechanical systems and make appropriate recommendations for efficiency based on their size and energy use as shown in the field practice activity and on quiz questions
8. Understand combustion as it applies in the building sciences and how it applies to the systems in the home; assess combustion appliances and make recommendations based on BPI standards as shown in the field practice activity and on quiz questions
9. Use modeling software to document information on the home and calculate Savings to Investment Ratio (SIR) for recommended measures as demonstrated on quiz questions
10. Be confident in evaluating all findings and make appropriate recommendations for improvement as demonstrated in the field practice activity and on quiz questions

Course Prerequisites

Please see the link in External Resources for a more detailed description of these requirements for candidates interested in testing for certification:

- 1,000 hours of work in a field position, performing audits in a building science trade, or training / BPI proctoring
- Energy Modeling experience: 10 energy models aligned with BPI Standards, complete six hours of BPI Standard-aligned training in modeling, or be a designated trainer of energy modeling that complies with BPI Standards
- Trade Experience: a combination of Building Trade Experience (1,000-2,000 hours), training from JTA-aligned training centers (40-80 hours), and industry certifications (1-2)

Candidates, testing and non-testing, should have the following:

- Basic literacy and math literacy skills (reading comprehension, addition, multiplication, subtraction, division, and use of a basic calculator)

If any of these are not met or if there is a question, please reach out to the training center coordinator, Pam Lewandowski: plewandowski@lhc.la.gov, to discuss preparation for the course and/or testing accommodations available through BPI.

Course Materials

Physical Materials:

- Hard copy of slides (provided for participants to keep)
- Calculator, Pencil, Highlighter, Post-its, Scratch Paper (provided for duration of course and testing, if appropriate)
- Required Equipment and Diagnostic Tools (provided for duration of course and testing)
- NREL Job Task Analysis and Checklist (provided for participants to keep)
- BPI Standards and Formula Sheet (hard copy)

External Resources:

- Listed prerequisites for attending the course per BPI Standards: <https://bit.ly/3KlMv9Q>
- BPI Energy Auditor Certification Requirements: <http://www.bpi.org/certified-professionals/energy-auditor>
- Louisiana Housing Corporation Training Center website: <https://www.lhc.la.gov/weatherization-training-center>
- Department of Energy Energy Auditor Guidelines: <https://www.energy.gov/eere/wipo/guidelines-home-energy-professionals-credentials>
- NREL JTA for Energy Auditor: <https://www.nrel.gov/docs/fy18osti/70985.pdf>

Course Schedule

<i>Day 1</i>	
8:00-8:30	Intro Lesson – LHC Training Policies, Safety and Conduct Protocols
8:30-9:45	I. Conduct II. Information Collection a. Record Review/ Homeowner Interview b. Measurements Field Practice Activity
9:45-10:00 BREAK	
10:00-11:00	
11:00-12:00	Lunch
12:00-2:30	c. External Observation Inspection d. Internal Observation Inspection Health and safety Windows and Doors Walls Field Practice Activity
2:30-2:45 BREAK	
2:45-4:00	

Day 2	
8:00-11:00 15 minute break as needed	Attic Foundation Mechanical Ventilation and Appliances Field Practice Activity
11:00-12:00	Lunch
12:00-2:30 2:30-2:45 BREAK	Heating, Cooling, Water Heater Field Practice Activity
2:45-4:00	III. Testing / Evaluation a. CAZ Testing b. Blower Door Testing c. Duct Blaster Set up/Testing
Day 3	
8:00-11:00 15 minute break as needed	Field Practice Activity b. Blower Door Testing c. Duct Blaster Set up/Testing Field Practice Activity
11:00-12:00	Lunch
12:00-2:30 2:30-2:45 BREAK	d. Building Science Field Practice Activity
2:45-4:00	Review Quiz – Field Practice
Day 4	
8:00-9:30 15 minute break as needed	Review Quiz - Questions
9:30-11:30	Written Exam
11:30-1:00	Lunch
1:00-4:00	Field Practice / Field Exam
Day 5	
Field Testing Scheduled in Labs – Course Feedback	

Evaluation

Formative Assessments

Formative content assessments will be completed throughout the lessons with class questioning and practice problems in the lesson.

Formative skills assessments will be conducted during the afternoon hands-on sessions in the simulation labs.

Feedback will be provided in real time for participants for immediate remediation.

Kahoot! Web trivia quizzes will be provided for continued personal review outside of the classroom.

Summative Assessments

More formal assessments are built into lessons to check comprehension and ensure retention of content. After each morning and afternoon lesson a review session will end with a quiz.

Scoring Assessments

Trainees will not be scored on formative assessments as they will be used to guide instruction and review. Summative assessments will be evaluated in class with the answers reviewed as in depth as needed. In order to pass the course, trainees should score 80% or higher on these exams.

BPI Certification Exams

1. Written Exam: 100 multiple choice questions given in computer lab on the afternoon of the fourth day of the class. The BPI Testing Center is equipped with a computer lab and certified proctor for testing on site. There is a 2 hour time limit.
2. Field Exam: Trainees will complete the field tasks according to the JTA checklist within a 4 hour time frame. The field exam is videotaped and the proctor for the field test will use a score sheet to document observations as per BPI protocols.

In order to acquire BPI HEP EA Certification, candidates must pass the written exam with a 70% or higher and the field exam with a score of 82% or higher and must successfully complete the gated items below. Failure to complete gated items successfully will mean that the participant cannot receive certification.

Gated Items:

- Candidate prepared combustible gas and CO measurement for use
- Candidate tested indoor ambient CO levels and compared results to current standards (ANSI/BPI-1200)
- Candidate tested indoor ambient air and verbally confirmed that combustible gases are below 10% of LEL on each floor of the building
- Candidate monitored and stated ambient CO levels measured in the CAZ during entire combustion safety testing
- Candidate set combustion appliance to pilot or standby