

ENERGY AUDITING (90 Hours)

Course No.: 72-85-50

COMPETENCY CHECKLIST

Student Name _____

Teacher Name _____ School Site _____

Start Date _____ Completion Date _____ Certificate Date _____

Teacher Signature _____ Student Signature _____

(Signatures verify completion of course competencies)

A. ORIENTATION AND SAFETY (5 hrs)

- _____ 1. Scope and purpose of the course
- _____ 2. Course content as part of Linked Learning
- _____ 3. Classroom policies and procedures
- _____ 4. Occupations in sector w/impact on auditors
- _____ 5. Gender equity of non-traditional populations
- _____ 6. Cal/OSHA laws governing energy auditors
- _____ 7. Impact of EPA legislation on industry sector
- _____ 8. Proper removal of hazardous materials
- _____ 9. NEC safeguarding auditors work conditions
- _____ 10. MSDS applies to energy auditing field
- _____ 11. LEED green building rating system
- _____ 12. City of LA codes & application to auditing
- _____ 13. Title 24 Energy Efficiency Standards
- _____ 14. Class & workplace first Aid procedures
- _____ 15. Pass the safety test with 100% accuracy

B. ENERGY (5 hrs)

- _____ 1. Define listed terms related to topic
- _____ 2. Energy transfer methods
- _____ 3. Discuss listed sources of energy

C. DATA COLLECTION (20 hrs)

- _____ 1. Define listed terms related to topic
- _____ 2. Steps in energy auditing data analysis
- _____ 3. Ways of energy usage tracking
- _____ 4. Create graphs to show patterns/trends
- _____ 5. How cost benefit analysis is achieved
- _____ 6. Finding alternative sources of energy
- _____ 7. Role of reports/recommendations
- _____ 8. Visit site and perform listed tasks
- _____ 9. Analyze data collected
- _____ 10. Recommend changes based on analysis

D. RESOURCE ACCOUNTING (15 hrs)

- _____ 1. Define listed terms related to topic

- _____ 2. Resource accounting prevents energy depletion
- _____ 3. Efficiency ratings of various resources available
- _____ 4. Importance of energy conversion
- _____ 5. Convert listed energy units
- _____ 6. Role of energy conversion charts in accounting
- _____ 7. Listed of factors that influence energy usage
- _____ 8. Visit site and perform listed tasks

E. ESTABLISHING BASELINES (5 hrs)

- _____ 1. Baseline/seasonal load/base load
- _____ 2. Residential/corporate energy bills
- _____ 3. Seasonal loads vs. base loads
- _____ 4. Steps in developing resource usage charts
- _____ 5. Site visit and perform listed tasks

F. TAKING INVENTORIES (15 hrs)

- _____ 1. Define energized systems
- _____ 2. Identify components of energized systems
- _____ 3. Non-energized/infrared/human systems
- _____ 4. Infrared imaging reveals system efficiency
- _____ 5. Energy inventories of human systems
- _____ 6. Strategies: reduce energy in human systems
- _____ 7. Commercial software for energy inventory
- _____ 8. Calculating monthly/annual energy use

G. LIGHTING AUDITS (10 hrs)

- _____ 1. Define listed terms related to topic
- _____ 2. Lighting system in the building
- _____ 3. Foot-candle levels for tasks in the building
- _____ 4. Types of ballast
- _____ 5. Lamp based on efficacy/average life in hours
- _____ 6. Maintenance costs & selection of lighting
- _____ 7. Steps used in taking lighting inventory
- _____ 8. Perform audit/do analysis/recommendations

H. WATER-USAGE AUDITS (10 hrs)

- _____ 1. Define listed terms related to topic
- _____ 2. Identify GPM for shower heads
- _____ 3. Typical flow rates for listed systems
- _____ 4. Usage & energy-efficient appliances
- _____ 5. Heating sources for typical building
- _____ 6. Various boiler checklist requirements
- _____ 7. Pipe insulation in using water efficiently
- _____ 8. Calculate calories to heat amounts of water
- _____ 9. Calculate kWhs to heat cubic foot of water
- _____ 10. Calculate Therms to heat cubic foot of water
- _____ 11. Cost of gas/electricity to heat water
- _____ 12. Perform audit/do analysis/recommendations

I. EMPLOYABILITY SKILLS (5 hrs)

- _____ 1. Employer requirements in employees
- _____ 2. Identify potential employers
- _____ 3. Electronic social networking in job search
- _____ 4. Design sample resumes and cover letters
- _____ 5. Filling out job application legibly/completely
- _____ 6. Complete sample job application forms
- _____ 7. Enthusiasm on a job
- _____ 8. Appropriate appearance on a job
- _____ 9. Continuous upgrading job skills
- _____ 10. Customer service to build business
- _____ 11. Appropriate interviewing techniques
- _____ 12. Resources needed for a successful interview
- _____ 13. Design sample follow-up letters
- _____ 14. Appropriate follow-up procedures