Energy Auditing for Buildings Training Course

Professional Development Training Course Outline

Category	Architectural Engineering	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Energy efficiency in the built environment has become a global priority driven by rising energy costs, climate change regulations, and the push toward net-zero carbon emissions. Energy Auditing for Buildings Training Course is designed to equip professionals with advanced skills in energy performance analysis, building diagnostics, carbon footprint reduction, and sustainable facility management. This program integrates modern auditing tools, smart metering technologies, and international energy standards such as ISO 50001 Energy Management Systems, enabling learners to identify inefficiencies and implement high-impact energy-saving strategies across residential, commercial, and industrial buildings.

With the increasing demand for green buildings, ESG compliance, renewable integration, and smart energy systems, this course prepares participants to become certified energy auditors capable of driving measurable sustainability outcomes. Learners will gain hands-on expertise in HVAC optimization, building energy modeling, thermal performance analysis, and IoT-based energy monitoring systems. The course emphasizes real-world application through case studies, simulations, and industry-aligned energy audit frameworks that align with global decarbonization goals and energy transition strategies.

Programme Curriculum

Energy Auditing for Buildings Training Course

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Course Duration

5 days

Course Objectives

1. Master building energy auditing techniques for residential and commercial structures
2. Understand ISO 50001 energy management systems implementation
3. Conduct advanced energy consumption analysis and benchmarking
4. Apply carbon footprint assessment in buildings
5. Optimize HVAC systems energy efficiency performance
6. Use smart meters and IoT energy monitoring tools
7. Develop net-zero energy building strategies
8. Perform thermal insulation and envelope analysis
9. Identify energy losses through thermographic inspection
10. Implement renewable energy integration in buildings
11. Conduct lighting system efficiency audits (LED retrofitting strategies)
12. Prepare energy audit reports aligned with ESG reporting standards
13. Build competency in green building certification frameworks (LEED, EDGE, BREEAM)

Target Audience

1. Energy engineers and consultants
2. Facility and maintenance managers
3. Mechanical and electrical engineers
4. Sustainability and ESG professionals
5. Architects and building designers
6. Government energy inspectors and regulators
7. Real estate developers and property managers
8. University students in energy and environmental sciences

Course Modules

Module 1: Fundamentals of Energy Auditing

- Energy audit types
- Energy flow analysis in buildings
- Introduction to energy performance indicators (EPI)
- Regulatory frameworks and compliance standards
- Energy baseline development

- **Case Study:** Residential apartment block energy consumption baseline analysis showing 22% energy wastage due to inefficient appliances

Module 2: Building Energy Systems Overview

- HVAC systems fundamentals
- Electrical distribution systems in buildings
- Water heating and cooling loads
- Renewable energy integration basics
- Energy loss identification points
- **Case Study:** Commercial office HVAC inefficiency leading to peak load penalties and corrective retrofit strategy

Module 3: Energy Audit Methodologies & Tools

- Walk-through vs detailed audit methods
- Data logging and measurement tools
- Energy audit instrumentation
- Software-based audit tools
- Energy modeling techniques
- **Case Study:** Hospital energy audit using sub-metering to reduce operational energy cost by 18%

Module 4: HVAC Optimization & Thermal Efficiency

- HVAC load calculations
- Chiller plant optimization
- Air distribution efficiency
- Thermal comfort standards (ASHRAE)
- Preventive maintenance strategies
- **Case Study:** Shopping mall HVAC retrofit reducing energy consumption by 30%

Module 5: Lighting & Electrical Systems Efficiency

- Lighting audit techniques
- LED retrofitting and smart lighting controls
- Power factor correction
- Electrical load balancing
- Demand-side management
- **Case Study:** Industrial warehouse lighting upgrade achieving 45% energy savings

Module 6: Renewable Energy Integration

- Solar PV systems in buildings
- Net metering concepts
- Hybrid energy systems
- Energy storage solutions
- Feasibility analysis for renewables
- **Case Study:** University campus solar integration reducing grid dependency by 40%

Module 7: Energy Reporting, ESG & Compliance

- Energy audit reporting structure

- ESG sustainability reporting frameworks
- Carbon accounting methods
- Benchmarking against global standards
- Energy performance certification
- **Case Study:** Corporate office achieving LEED Gold certification after structured energy audit improvements

Module 8: Advanced Smart Energy & IoT Systems

- Smart building automation systems
- IoT-based energy monitoring
- AI-driven energy analytics
- Predictive maintenance systems
- Digital twin technology in buildings
- **Case Study:** Smart building deployment reducing peak energy demand by 25% using AI-based controls

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com