



The Energy Training Foundation (ETTF)

Training and certification of energy professionals in Southern Africa

- Sole approved training partner of the AEE for the Southern African region
- Affiliated training provider of the SAEE
- Fully accredited EWSETA training provider
- ECSA CPD credits for all training courses
- Training division of Energy Cybernetics (PTY) Ltd

BEAT
BUILDING ENERGY AUDITOR TRAINING

Building Energy Audit Training

The Building Energy Audit Training (BEAT) aims to provide skills, knowledge and understanding of the principles of conducting an energy audit, embedding good practice in facility operations and enabling a systems approach to energy auditing planning and implementation.

The Building Energy Audit Training (BEAT) is an EWSETA accredited SAQA registered unit standard.

The context of the course refers to energy performance in buildings, climatic conditions, and good practice with regard to building operations.

The course runs over 5 days, and encompasses class-based lecturing and facilitation, practical workbook exercises, and the completion of in-class and homework assignments.

Candidates have the option to complete a Portfolio of Evidence (PoE) to be submitted for assessment and EWSETA recognition – a choice of PoE topics are available, and/or to undertake further training in the Measurement and Verification (M&V) of energy savings (the MVST-sa training course), and the possibility to undertake the international training programme of Certified Energy Auditor (CEA) with the opportunity to apply for international Certification with the Association of Energy Engineers (AEE) – subject to meeting the AEE eligibility requirements.

Duration:

5 days of class-based training

Recognition:

A Certificate of Attendance to all delegates in attendance

EWSETA recognition requirements: Submission of a Portfolio of Evidence

10 EWSETA Level 6 credits if the option is selected to submit a Portfolio of Evidence upon competence declaration by the assessor and approval by the EWSETA. Additional EWSETA credits are also available on this course, on request, for the sub-modules included in the instruction manual.

PRE-REQUISITES FOR BEAT

The following knowledge, skills attitude or equivalent is required:

- Communication at NQF level 5
- Mathematical Literacy at NQF level 5

COURSE OUTLINE

Background:

Climate change, global warming, benefits of energy efficiency, legislation and standards, incentive schemes, funding and support for energy efficiency

Energy and its various forms:

Energy, chemical energy, thermal energy, mechanical energy, electrical energy, units of energy, energy in buildings

Electrical energy:

Electrical power, definitions and units, alternating current, power factor and related topics, energy consumption, energy efficiency, electrical equipment efficiency, co-efficient of performance

Thermal energy:

Useful thermal energy, units of measure, sensible and latent heat, evaporation, condensation, steam, moist air, humidity, heating and cooling degree days

Heat transfer:

Conduction, convection, thermal radiation, radiation loss, insulation and materials, heat losses from pipes, heat transfer, energy flow calculations, conductive heat flow, heat flow in building envelopes, heat loss calculations, refrigeration, steam leaks, and vents

Energy management:

Standards and specifications, the aim of an energy management system, what an energy management system should look like, quality control of audits and energy management

Data analysis:

Collect and measure energy consumption data, data sources, energy consumption systems, historical data analysis, analyse energy consumption, costs, tariffs, bill verification, purchased energy sources and data, load factor and utilisation factor, metering, equipment, energy use inventory, measuring for energy auditing, metering checks, metering terminology, load management, graphical analysis of historical data, energy density calculations, correlation of energy consumption to drivers, demand analysis, electrical load inventories

Building envelopes:

Types of buildings, savings potential, benchmarking building management, green building materials, energy sources, health and productivity, infiltration loads, building heat losses, loads within buildings, control systems

Energy auditing:

Relevant standards and legislation, context for energy audits in buildings, defining energy audits, systems approach, audit steps,

audit plan, client meetings, walkthrough audits, energy management opportunity assessments, audit reports, alternative approaches, energy auditing instruments

Lighting systems:

Light sources, lamp types, standards, lighting system analysis and controls, lighting energy management opportunities

Plug loads:

Reducing plug loads, energy star, green IT, benchmarks

Motors, drives and driven equipment:

Electric motors, energy management opportunities in motors, motor replacement, fans and pumps, variable speed drives, compressed air systems

HVAC:

Heating, ventilation and aircon systems, causes of excessive use, steam and hot water distribution, energy management opportunities matching requirements

Water and energy efficiency:

Water heating, reducing consumption, temperature, piping, inventories, solar water heating, insulation

Renewable energy:

Options for alternative generation, solar potential, solar water heating, PV and wind turbine systems

The business case:

Energy management opportunity identification, assessing costs and benefits, interpret a business case for an energy audit, investment appraisal, investment criteria, simple payback, cash flow, net project value, net present value, internal rate of return, risk and sensitivity analysis, business case structure

RECOGNITION OF PRIOR LEARNING

EnTF are able to evaluate RPL requests before training.

COSTS*

Five-day BEAT course with training manual:

R10 700.00 (excl VAT)

Submission of Portfolio of Evidence for assessment:

R2 000.00 (excl VAT) per assessment

Mentorship Assistance on Quotation Basis

BOOKINGS

Logon to www.energytrainingfoundation.co.za to register online or download a manual registration form and email it to training@entf.co.za.

* Terms and conditions

1. First paid first served policy applies for booking security
2. Booking security requires the following to be received six (6) working days prior to the commencement of the course:
 - a. Full payment with proof of payment supplied.
 - b. A deposit of 25% with proof of payment supplied.
 - c. A purchase order for the full amount of the invoice.
3. Fees include coffee/tea/juice on arrival, mid-morning coffee/tea with pastries, mid-afternoon coffee/tea with biscuits, and lunch. For training the fee includes the black and white text books, course fee and one year membership of the SAAEE. For examinations the fee includes the examination fee, marking fee, certification application fee, and 1 year membership of AEE for successful candidates.
4. It is the responsibility of the candidate attending the course to arrange their own travel, accommodation, breakfast and dinner.
5. Policy on international candidates
 - a. Invoices exclude withholding and country-specific taxes. Should these be leveraged by your country government, we reserve the right to invoice the responsible entity/person to recoup the costs.
 - b. VAT is payable for candidates attending training in South African borders, this may be claimed on departure from South Africa using the tax invoice.
6. Policy on cancellations
 - a. Cancellations received within five (5) working days prior to the first day of training will carry a 25% cancellation fee. No course material will be supplied. For examinations a rescheduling fee of 25% will be leveraged.
 - b. Cancellations received six (6) working days prior to the first day of training will receive a full refund.
7. Policy on accounts not in good standing
 - a. The candidate in attendance at the course ultimately remains responsible for payment of the outstanding account and providing the proof of payment thereof.
 - b. In the event that a candidate, or the candidate's organisation is not in good standing with us we reserve the right to withhold:
 - Certificates of Attendance
 - Course Attendance Registers
 - Issuing of ECSA CPD credits
8. Examination Results
9. AEE Certification Application and/or Renewal Submissions
10. AEE Certification Certificates
11. Listing on the AEE website
12. The Energy Training Foundation (EnTF) is a division of Energy Cybernetics (Pty) Ltd and the invoice will be made out by Energy Cybernetics.
13. Proforma invoices will be supplied, Tax Invoices will be raised on request but these are payable within 30 days of issue.
14. Right of Admission Reserved.

About the Energy Training Foundation

The EnTF offers tailor-made training courses to fulfil the energy training needs of the industrial, mining and commercial industries in Southern Africa. EnTF is an accredited EWSETA training provider, and all courses carry CPD credits for ECSA requirements. EnTF is the sole approved US-based Association of Energy Engineers (AEE) training partner for the Southern African region. The most popular standard courses are: Certified Energy Manager (CEM®), Certified Energy Auditor (CEA™), Certified Measurement and Verification Professional (CMVP®), Certified Renewable Energy Professional (REP™), Certified Water Efficiency Professional (CWEP), Fundamentals to Energy Management Training (FEMT), Energy Management System Implementation (EnMSI), Building Energy Audit Training (BEAT) and Measurement & Verification Standard Training for South Africa (MVST-sa).



The EnTF is the sole approved training partner for the Southern African region of the US-based Association of Energy Engineers (AEE) who has been promoting the scientific and educational interests of those engaged in the energy industry and developing energy engineering programmes since 1977. AEE certification qualifications are recognised world-wide in 98 countries.



The EnTF is the affiliated training provider for the AEE's chapter in South Africa, the Southern African Association for Energy Efficiency (SAEE). The SAEE has been facilitating information dissemination, networking and training in the region since 2002.



The EnTF is a fully accredited Energy and Water SETA (EWSETA) training provider in South Africa.



All EnTF courses have ECSA accreditation for CPD credits to ensure maximum benefit for professional development in the engineering industry of South Africa. ECSA CPD credits, where appropriate, may be used towards Professional Development Hours (PDH) or Continuing Education Units (CEU) for the AEE's re-certification programme to ensure Continuing Professional Competency (CPC).

For more information: • info@entf.co.za • 084 622 4770/084 011 5500 • www.entf.co.za