



# The Energy Training Foundation (ET<sub>F</sub>)

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

# CEM<sup>®</sup>

## Certified Energy Manager (CEM<sup>®</sup>)

*The Certified Energy Manager (CEM<sup>®</sup>) programme recognises individuals who have demonstrated high levels of experience, competence, proficiency, and ethical fitness in the energy management profession. CEM<sup>®</sup> comprises an elite group of professionals serving industry, business and government throughout the world.*

An international qualification for professionals who require a detailed program of instruction that covers the technical, economic and regulatory aspects of effective energy management. The program offers a comprehensive learning and problem-solving forum for those who want a broader understanding of the latest cost reduction techniques and strategies followed by a voluntary examination which could lead to international certification with the US-based Association of Energy Engineers (AEE).

### TRAINING PROGRAMME OUTLINE

- The need for energy management
- Conducting an energy audit, audit reports and energy audit instrumentation
- Energy codes, standards and protocols
- Energy purchasing, accounting and benchmarking
- Energy and electricity rate structures
- Electrical systems and electric energy management
- Economic analysis and life cycle costing
- Lighting basics and lighting system improvements
- Electric motors and industrial systems
- Thermal energy storage
- Boilers and thermal systems improvement
- Waste heat, co-generation, CHP systems
- Renewable energy sources
- Maintenance programs and building commissioning
- Building automation and control systems
- M&V and alternative financing
- Green buildings and LEED

- Units and conversions
- Charts, tables and list of acronyms provided

### COURSE OUTCOMES

On completion of the CEM<sup>®</sup> course you will be able to immediately implement solutions to enable energy efficiency. On obtaining certification with the AEE you will be one of thousands of distinguished professionals in the international energy engineering fraternity.

### DELEGATE PROFILE

- Persons that need to find ways of saving energy through reduced fuel costs, electrical use, transport requirements, improved supply chain, water savings, etc.
- Persons who have been working in the energy management industry for a number of years and would like to obtain a recognised qualification within the energy engineering career path.
- For architects, built environment graduates, engineering graduates, environmental graduates the CEM<sup>®</sup> will open new doors to the fastest growing industry in the world.
- Persons that need to implement an energy management strategy at an organisation and be able to determine a baseline from where to implement a variety of energy saving activities from understanding electricity rate structures and economic analysis of alternative investments, to considering insulation, boilers, codes and standards, waste heat, motors, to name but a few.
- Persons that need recognition as a professional who stays up to date on the latest developments in the energy industry by

participating in continued energy education that is internationally recognised.

- Those who are responsible for obtaining ISO50001 accreditation and implement SABS50010 standards to qualify for financial energy saving incentives.

## BASIC SKILLS REQUIRED

The CEM® training course is at a level which assumes the delegate has basic problem-solving skills, including quick and accurate use of a scientific hand calculator, the ability to use basic algebra and to set up problem solution expressions and calculations from a written problem statement.

## EXAMINATION

The CEM® examination will be administered on the morning after the last day of the training. There is no obligation to write the CEM® exam on the last day and delegates wishing to only attend the training may do so; delegates that wish to write at a later date may register accordingly. Pre-registration for the examination is required. Kindly also inform us beforehand of your intention to apply for certification from the AEE.

## ELIGIBILITY FOR CERTIFICATION

The prerequisites to qualify for the certification process have been designed to take into account the possible diversity of education and practical experience an individual may have. However, each CEM® candidate must attend the CEM® training programme, pass the written CEM® 4-hour examination with 70%, and meet one of the following criteria:

- A 4-year engineering or architectural degree, or a registered Professional Engineer (P.E.), or Registered Architect (R.A.) – within South Africa a Pr Eng, PrArch – with at least 3 years' experience in energy engineering or energy management.
- A 3-year technical degree – within South Africa a PrTechEng, PSAT – with at least 4 years' experience in energy engineering or energy management.
- A 4-year business or related degree, with at least 5 years' experience in energy engineering or energy management.
- A 2-year technical degree – within South Africa PrTechniEng, PAT – with 8 years' experience in energy engineering or energy management.
- 10 years or more verified experience in energy engineering or energy management.
- Re-certification is required every 3 years subject to participation in the AEE continuing education program (CEP).

## STEPS TO CERTIFICATION

1. Attend a minimum of 85% of the CEM® training course with an

AEE approved training partner.

2. Write the CEM® examination and attain a 70%+ pass mark.
3. Complete your CEM® certification application and return it to your training provider timeously.
4. The local and international CEM® Board will review your application.
5. Your training provider will advise you of the Board's decision.
6. Should you receive feedback that you are a EMIT (in-training) you may re-apply for certification within 3 years which provides ample time to gain more experience.

## RECOGNITION

### Engineering Council of South Africa (ECSA)

5 Continuing Professional Development (CPD) credits for ECSA registration.

### Association of Energy Engineers (AEE)

7.2 credits for Continuing Professional Competency (CPC) demonstration to re-certify on another AEE certification program.

### International certification with the AEE

International AEE certification may be applied for as a CEM® on attaining a 70% pass-mark for the examination.

### Attendance certificate

Attendance certificate will be issued to all delegates that attend the full duration of the training course. (85% or higher attendance required.)

## COSTS\*

### Course only fee:

**R15 700.00 (excl VAT)**

### Examination and Certification application fee:

**R3 200.00 (excl VAT)**

### Examination rewrite fee: R2 700.00 (excl VAT)

**Optional full colour manual: R1 600.00 (excl VAT)**

**Course fee includes:** 5 day training course, attendance certificate, black and white manual, one year SAEE membership, lunch, teas and coffees

**Examination and Certification application fee includes:** Four hour examination sitting, tea/coffee and snack, marking and proctoring fee, peer reviewed certification application, AEE certificate, certification ceremony in SA, one year AEE membership.

## BOOKINGS

Logon to [www.energytrainingfoundation.co.za](http://www.energytrainingfoundation.co.za) to register online or download a manual registration form and email it to [training@entf.co.za](mailto: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 SAEE. 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.
- a. 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

- Examination Results
- AEE Certification Application and/or Renewal Submissions
- AEE Certification Certificates
- Listing on the AEE website
8. The Energy Training Foundation (EnTF) is a division of Energy Cybernetics (Pty) Ltd and the invoice will be made out by Energy Cybernetics.
9. Proforma invoices will be supplied, Tax Invoices will be raised on request but these are payable within 30 days of issue.
10. 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](mailto:info@entf.co.za) • 084 622 4770/084 011 5500 • [www.entf.co.za](http://www.entf.co.za)