# Certified Measurement and Verification Professional®

## 3-Day Program for Professional Certification

**Date:** 16-18 August, 2018
**Time:** 9:00 am to 5:30 pm
**Exam:** 1:30 pm to 5:30 pm (Last Day)
**Venue:** Hong Kong Baptist University

**Course Code:** CMVP/03/HK
**Early Bird Deadline:** 31 May, 2018
**Registration Deadline:** 1 August, 2018

## THE MARK OF A PROFESSIONAL

Association of Energy Engineers, in cooperation with the Efficiency Valuation Organization (EVO), has established the **Certified Measurement and Verification Professional** program with the dual purpose of recognizing the most qualified professionals in this growing area of the energy industry, and raising the overall professional standards within the measurement and verification field.

*The International Performance Measurement & Verification Protocol (IPMVP)*, first established by the U.S. D.O.E., has become the internationally recognized protocol for performance measurement and verification (M&V). The IPMVP guidelines, built with the help of organizations from 16 countries and hundreds of individual experts from 25 nations, provides a consistent, reliable approach to M&V around the world.

Since 1981, AEE has certified over 22,000 professionals within the energy industry. AEE's certifications are recognized by governmental agencies, including the U.S. Department of Energy and the U.S. Agency for International Development, as well as by utilities, end users, and energy service companies. When you earn the right to put the initials "CMVP" behind your name, you are distinguishing yourself among those involved professionally in areas requiring the application of accurate and reliable measurement and verification methodologies. You have demonstrated high levels of experience, competence, and specialized knowledge within your field.

## COMPREHENSIVE 3-DAY TRAINING PROGRAM FOR CMVP

**Course & Exam Fee:**

| | | |
|---|---|---|
| **A1:** | **Ordinary Applicants:** | **HK $13,500** |
| **A2:** | **Early Bird[#]:** | **HK $12,000** |
| **Re-exam** | | **HK $ 3,000** |

[#] Early Bird: Registered before 31 May, 2018

**Supporting Organizations:**

## ABOUT THE COURSE

Proven energy savings are now playing a significant role in financing energy management programs, whether through energy performance contracts or through emission trades under schemes such as the clean development mechanism of the UNFCCC. While interest in savings data is growing, the state of the art in determining savings has also been rapidly evolving. This seminar will examine current best practices for determining and documenting savings, specifically reviewing the current edition of the International Performance Measurement & Verification Protocol (IPMVP). Attendees will learn the process of designing a proper M&V program for their projects, including cost/accuracy tradeoffs, baseline adjustments, interactive effects, types of savings, maintaining transparency, and analysis methods. Examples of specific techniques will be presented, along with common pitfalls which can result in unreliable savings reports. These techniques are central to management under the new ISO 50001 standard for Energy Management Systems. Class time will include problem solving and debate. Bring a calculator and any M&V challenges you may currently face for general discussion. Through participating in a "fundamentals" course, persons experienced in M&V will also appreciate the assembly of all of the issues, the debates, and engagement at their own level with expert instructors.

## INSTRUCTOR

**Ir Gary Chu** got BSc in Electrical & Electronics Engineering from the University of Macau in 1993 and MPhil in Electrical Engineering from the HK PolyU in 2000. About 20 years' experience in the process plant and energy technology areas. Between 2005 and 2007, he was invited by Macao SAR Government as a technical consultant for responsible for the development on energy market at Macao. Now he is an independent consultant on number of companies in various engineering area. Specifically, at the Mainland China, he provides an energy management consultancy service which including energy audits, energy data analysis, baseline measurement, M&V plan, and energy efficient project. He also achieved various professional qualifications on energy and green building areas: CEM®, CAP, CMVP®, CEA, CBCP®, BEAM Pro and LEED® Green Associate.

## COURSE OUTLINE

### REASONS FOR M&V
• Types of uses for M&V
• M&V's role in financing

### CURRENT M&V PROTOCOLS
• Relationship of IPMVP and other guidelines

### IPMVP
• Its evolution
• Overview of IPMVP Options A, B, C & D

### DEVELOPING AN M&V PLAN
• Principles of M&V
• Scope of energy to be monitored
• Differences between M&V for industry and for buildings
• "Cost avoidance" or "normalized savings?"
• Choosing independent variables for routine baseline adjustments
• Sources of data
• M&V budgets
• Selecting the baseline period and data
• Measurement systems design, commissioning & maintenance
• Baseline analysis methods
• Various forms of savings computation
• Valuing savings
• Routine procedures and QC

**Supporting Organizations:**

- Managing the uncertainty created by sampling, metering, modeling and unknowns
- Bias and rounding
- Reporting procedures
- Coordinating with other purposes
- When to do the M&V Plan

## Eligibility

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 CMVP candidate must meet one of the following criteria with the pass of exam:

- A **Certified Energy Manager (CEM)**
- An **engineering, science, business degree or related degree and/or R.P.E and/or P.E.**, with at least ***three*** years experience in energy or building or facility management, or measurement and verification.
- A **technical diploma or certificate**, A ***four*** years non-technical degree or technical diploma with a least ***five*** years of verified experience in energy or building or facility management, or measurement and verification.
- ***Ten*** years of verified experience in energy or building or facility management, or measurement and verification.

## Conditions

1. **All candidates should firstly fax/email the form for registration and pay ASAP for seat confirmation.**
2. **Every effort will keep the course date unchanged. However, all candidates will be informed well in advance should there be any change of course date due to venue booking and other reasons.**
3. **The course contents may subject to change according to the decision of the instructors.**
4. **The organizer reserves the right to cancel the course should there be insufficient candidates or other reasons. Course fee will then be refunded 100%.**
5. **The organizer reserves the right to close the application before the deadline should the application exceeds the maximum intake.**
6. **All CMVP successful candidates will enjoy a 1-year free AEE membership and a CMVP certificate if he/she fulfils the eligibility requirement.**
7. **A limited maximum of 40 students will be accepted for the class.**

**Supporting Organizations:**

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# Certified Measurement and Verification Professional (CMVP) Program for Professional Certification

**Course Code: CMVP/03/HK**

## Registration

**Early Bird Deadline: 31 May, 2018**
**Course Deadline: 1 August, 2018**
**(First come first served, application may early close if class size reaches 40)**

To register, please complete the reply slip and fax to +852 3107 1388 or email to fiona.lok@cinotech.com.hk

**Method of Payment**, please refer to below:

By direct deposit or ATM transfer to AEE's HSBC Account no. 614-054229-838.

(Please write your name on the bank-in slip and then email to **Ms Fiona Lok** (tel. +852 2151 2083): fiona.lok@cinotech.com.hk)

## Course Enquiry

Dr Leonard Chow, AEE Authorized Course Certification Manager in Hong Kong.
Tel: (852) 2566 3397, leonardchow@ispl.com.hk

| | | Fee | Amount (HK$) |
|---|---|---|---|
| **Course & Exam Fee** | **A1: Ordinary Applicants** | **HK $13,500** | |
| | **A2: Early Bird** | **HK $12,000** | |
| | **Re-exam** | **HK $3,000** | |
| | | | |

Name (Same as HKID Card): _____ (Ir/Mr/Ms/Miss)

Company Name: _____

Position Title: _____

Company Address: _____

Contact Phone: (Office) _____ (Mobile) _____

Fax #: _____ Email Address: _____

Institution: _____ Membership No: _____

Amount (HK$): _____

**Supporting Organizations:**