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## 2-Day Course on 'HVAC Design: Cooling Capacity Calculation & Psychrometrics' by Ir. Chua Keng Seng

Date: 18 & 19 January 2021 | 02 & 03 August 2021  
Venue: Wisma IEM, Petaling Jaya, Selangor  
Time: 9.00 a.m – 5.00 p.m  
Organized by: IEM Training Centre Sdn Bhd

HRDF  
Claimable

### Registration Fee (Inclusive of 6% SST)

IEM Member	Non Member
RM1,060.00	RM1,590.00

### Terms & Conditions:

- Closing date: **one week before the event**
- Payment via CASH / CHEQUE / BANK-IN TRANSMISSION / WALK-IN
- FULL PAYMENT must be settled before commencement of the course, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participants fail to attend the course, the fee is to be settled in full.
- Fee paid is not refundable. Registration fee includes lecture notes, refreshment.
- **IEM Training Centre reserves the right to cancel, alter, or change the program due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes. In view of the limited places available, intending participants are advised to send their registrations as early as possible so as to avoid disappointment.**
- **Please be informed that the course will only be carried out if there is sufficient number of participants. The confirmation or cancellation email will be sent to the registered email address one or two weeks before the event dates.**

### CANCELLATION POLICY

IEMTC reserves the right to postpone, reschedule, allocate or cancel the course. Full refund less 30% if cancellation is received in writing more than 7 days before the start of the event. No cancellation will be accepted prior to the date of the event. However, replacement or substitute may be made at any time with prior notification and substitute will be charged according to membership status.

## **PROFILE OF COURSE FACILITATOR**

**Ir. Chua Keng Seng**, B.E.(Hons), MIEM, P.Eng., MASHRAE, MIMM, CCP, graduated from the University of Malaya in 1974. Qualified as a Professional Engineer, he worked with Carrier Malaysia Sdn. Bhd., first as the Service Manager and then as Engineering Manager for about 10 years. During the next 25 years, he operated his own companies in contracting, maintenance and also in consultancy business. He has wide experience in the design, installation, trouble shooting on various types of systems and also in project management. He was in the design and project management team which implemented the Putrajaya Precinct 2 District Cooling Plant which has a capacity of 30,000 cooling tons. Ir. Chua has also been involved in many training programmes. He lectured air conditioning design in the Mechanical Faculty of University Malaya between 1978 to 1984 and in Monash University for the last 3 years. Besides he had been invited to deliver lectures and presentations in the University Technology Malaysia, University Technology Petronas, The Institution of Engineers, Malaysia and conducted in-house training for some Corporate Companies.

## **INTRODUCTION**

Cooling capacity calculation is the most fundamental requirement for any air conditioning system design. The application of psychrometric principles is often regarded as an area of mystery to many air conditioning engineers. However, it is the key for solving many air conditioning problems such as condensations, humidity problems, non-performance at part-load operations etc

## **OBJECTIVES**

The objective of this course is to enable participants to calculate the cooling capacity required for a particular air conditioning system. Furthermore, the participants will understand the practical applications of psychrometric in air conditioning, design for humidity controlled systems and problem solving using psychrometric chart.

## **TOPICS**

### **A. HEAT LOAD CALCULATION**

An overview: heat loads and cooling capacities, temperature as a state of equilibrium | Methods of cooling load estimation | Heat load calculation using E20 method | Some short-cut methods | Some pitfalls: under-sizing, over sizing

### **B. FUNDAMENTAL PSYCHROMETRICS**

A study of the properties of the moist air | Dry bulb and wet bulb temperatures | Humidity: Relative humidity and moisture contents | Dew point temperature

### **C. UNDERSTANDING PSYCHROMETRIC CHARTS**

Properties of moist air | Temperatures, humidity, enthalpy, density

### **D. FUNDAMENTAL THERMODYNAMIC PROCESSES**

Cooling, heating, humidification, dehumidification | Understand condensation

### **E. PSYCHROMETRIC CALCULATIONS**

Concept of bypass factor | Effective sensible and latent loads | Sensible heat factor | Mixing of air | Concept of apparatus dew point temperature | Calculation of air flow quantities | Calculation of on-coil and off-coil temperatures

### **F. HUMIDITY CONTROL**

Types of dehumidification methods: chemical & refrigeration | Advantages and disadvantages of both methods | Reheating | Moisture control at source | Energy consumption analysis and conversation

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HVAC Design: Cooling Capacity Calculation & Psychrometrics'  
by Ir. Chua Keng Seng**

**REGISTRATION FORM**

Email: [faiza@iem.org.my](mailto:faiza@iem.org.my) / [faiza.iemtc@gmail.com](mailto:faiza.iemtc@gmail.com) webpage: [www.iemtc.com](http://www.iemtc.com)

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Dates	IEM Member	Non-IEM member
18 & 19 January 2021	<input type="checkbox"/> RM1,060.00	<input type="checkbox"/> RM1,590.00
02 & 03 August 2021	<input type="checkbox"/> RM1,060.00	<input type="checkbox"/> RM1,590.00

No	Name(s)	M'ship No.	Grade	Fee (RM)*
1.				
2.				
3.				
4.				
<b>TOTAL PAYABLE</b>				

You may make payment via Telegraphic Bank Transfer (Please forward soft copy of payment advice):-

Account Name: **IEM TRAINING CENTRE SDN BHD**  
 Account Number: **514169143176**  
 Bank Name: Malayan Banking Berhad  
 Bank Address: Jalan Sultan, 46200 Petaling Jaya, Selangor Darul Ehsan, Malaysia  
 Swift Code: MBBEMYKL

**NB: Kindly take note that all telegraphic charges to be borne by the participants.**

Enclosed herewith a crossed cheque No: \_\_\_\_\_ for the sum of RM \_\_\_\_\_ issued in favour of "**IEM Training Centre Sdn Bhd**" and crossed 'A/C payee only'. I/We understand that the fee is not refundable if I/We withdraw after my/our application is accepted by the Organising Committee as stated in the **cancellation term**. If I/We fail to attend the seminar, the paid registration fee will not be refunded.

Contact Person: \_\_\_\_\_ Designation: \_\_\_\_\_

Name of Organization: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ (O) \_\_\_\_\_ (Fax)

\_\_\_\_\_ (H) \_\_\_\_\_ (HP)

Email: \_\_\_\_\_

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Signature & Stamp

\_\_\_\_\_  
Date