

## **2-Day Course on 'Pumping System and Pipe Sizing' by Ir. Chua Keng Seng**

**Date: 14 & 15 June 2021 | 11 & 12 October 2021**  
**Venue: Wisma IEM, Petaling Jaya, Selangor**  
**Time: 9.00 a.m – 5.00 p.m**  
**Organized by: IEM Training Centre Sdn Bhd**

### **Registration Fee (inclusive of 6% SST)**

<b>Dates</b>	<b>Online Training</b>		<b>Onsite Training</b>	
	<b>IEM Member</b>	<b>Non-IEM member</b>	<b>IEM Member</b>	<b>Non-IEM member</b>
14 & 15 June 2021	<input type="checkbox"/> RM780.00	<input type="checkbox"/> RM980.00	<input type="checkbox"/> RM1,000.00	<input type="checkbox"/> RM1,200.00
11 & 12 October 2021	<input type="checkbox"/> RM780.00	<input type="checkbox"/> RM980.00	<input type="checkbox"/> RM1,000.00	<input type="checkbox"/> RM1,200.00

### **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.

## TOPICS

### 1.0 SECONDARY REFRIGERANT: WATER & BRINE

Water as secondary refrigerant and heat transfer medium | Glycol system: operation and performance

### 2.0 HYDRONIC SYSTEM IN AIR CONDITIONING SYSTEM

Energy consumption of pumping system in HVAC | Constant flow and variable flow systems | Pump performance under variable flow: Pump Affinity Laws | Piping system under variable flow: system curve | Chilled water circuit design: Single loop, Main pipe by-pass, Primary secondary circuit, Variable Chiller Flow

### 3.0 ENERGY SAVING STRATEGIES IN CHILLED WATER SYSTEM

Comparative study on the various Control Strategies for secondary pump | Optimization of chilled water operating temperatures | Chillers in parallel and in series operation

### 4.0 PUMPING SYSTEM DESIGN

Closed circuit and open circuit design | Multiple chiller circuiting for chilled water | Multiple chiller circuiting for condenser water

### 5.0 PIPING SYSTEM

Pipe materials for different services | Pipe insulation – condensation prevention

### 6.0 PIPE SIZING CRITERIA

Frictional loss and Erosion | Pipe velocity limitation | The Darcy-Weisbach Equation for pipe friction calculation | Frictional Loss Charts for different pipe materials

### 7.0 PIPE SIZING USING CHARTS

Pipe sizing using Charts | Chilled Water pipe sizing example

### 8.0 FRICTIONAL LOSS CALCULATION

The function, construction and pressure losses of various valves & fittings:

Gate valve, globe valve, butterfly valve, strainers, elbows | Tees and so on | Calculation of pipe system losses | Condenser Water pipe sizing example

### 9.0 CHILLED WATER PIPE SIZING TUTORIAL

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by Ir. Chua Keng Seng**

**REGISTRATION FORM**

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

**Organized by: IEM Training Centre Sdn Bhd**

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	IEM Member	Non-IEM member	IEM Member	Non-IEM member
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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: \_\_\_\_\_

\_\_\_\_\_  
Signature & Stamp

\_\_\_\_\_  
Date