



**APPLIED TECHNOLOGY**  
GROUP OF COMPANIES  
Australia • New Zealand • Hong Kong • Malaysia • Singapore

**Applied Technology Group Sdn Bhd (1012178-W)**

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47600 Subang Jaya, Selangor, Malaysia.

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## Course On

# Air Conditioning & Refrigeration Systems

Date : 22<sup>nd</sup> March 2017 (Wednesday)

Time : 10.00 am to 4.00 pm

Venue : Armada Hotel, Petaling Jaya

### COURSE OVERVIEW

The 1-Day intensive course focuses on :

- The theoretical and practical aspects of air conditioning and refrigeration system.

The course highlights :

- Principles of Operation of air conditioning and refrigeration
- Basic Components of air conditioning and refrigeration
- Mollier Charts for Performance Analysis
- Pressure-Enthalpy Diagram
- Refrigeration Process Analysis
- Principle and selection of Capillary Tubes
- Thermostatic expansion valve
- Evaporator and condenser
- Compressor
- General Maintenance

Work examples & calculations are done to give a better understanding of the operation and application of liquid chillers.

### LEARNING OUTCOME/ BENEFITS OF COURSE

This course will provide the participants with the followings benefits:

- Understanding the principles of operation of air conditioning and refrigeration.
- Understanding the significance of various components of air conditioning and refrigeration.
- Learning how to apply the Mollier chart to analyse the performance of air conditioning.
- Understanding the various performance characteristics of **Capillary Tubes**.
- Understanding the performance characteristics of thermostatic expansion valves.
- Understanding the principle of evaporator and condenser.
- Understanding the principle of compressor.
- Knowing the importance of maintenance of air conditioning and refrigeration.

#### Special Discount

Early Bird Discount RM50

*Register for course and pay before 22<sup>nd</sup> February 2017*

# Air Conditioning & Refrigeration Systems

## SPEAKER PROFILE



**Dr. Ling Foon Fatt**

**Dr. Ling Foon Fatt** has extensive experience in Education, R & D, Training, Consultancy and Manufacturing, having held various posts and positions with the following organizations:

1. Associate Professor, Mechanical Engineering Department, University of Malaya (1981 - 1994).
2. Technical Advisor, OYL Industries Bhd.(1987-1994)
3. Chief Executive Officer, TOPAIRE Sdn. Bhd.(1994-1996)
4. Senior Group General Manager, Top Group Holdings Bhd.
5. Director of a Consulting Engineering Firm.
6. Engineering & Training Advisor, UMJ Air-Conditioning Sdn. Bhd.
7. Member of International Editorial Advisory Board, Journal of Energy, Heat and Mass Transfer.(1988-1994)

Dr. Ling has been the Principal Interviewer for the Examination of Corporate Membership of the Institution of Engineers, Malaysia (1976 - 1983); Chairman, Sub-Committee in Qualification Assessment, The Institution of Engineers, Malaysia (1981- 1983); and The Council Member of the Institution of Engineers, Malaysia (1981/82 - 1983/84).

He was a member of the Steering Committee on Training and Entrepreneur Development, Federation of Malaysia Manufacturers (1992 - 1996).

Dr. Ling has supervised more than 80 engineering thesis projects, and published over 50 technical papers in International and regional journals.

Dr. Ling has conducted over 300 public courses and has written 20 work books.

Over 3000 engineers, managers, executives, supervisors and technicians have successfully attended the public courses conducted by Dr Ling. The participants are from various industries of Manufacturing, Services, Education, Oil & Gas, Construction and Commerce.

Dr. Ling has conducted in-house training for over 30 companies and organizations.

## WHO SHOULD ATTEND

This course is designed for:

- University and College Lecturers
- Maintenance Engineers/Managers/Executives
- Consulting Engineers
- Service Engineers
- M&E Contractors
- Building/Complex Owners
- Chargemen & Technical Executives
- Technicians who deal with Air Conditioning & Refrigeration Systems and

*Claimable under HRDF SBL scheme subject to max limit allowed.  
BEM CPD-Hours (Application in progress), CIDB CCD-Points (Application in progress)  
Suruhanjaya Tenaga Register Electrical Energy Manager (REEM) CPD: (Application in progress)*

# Air Conditioning & Refrigeration Systems

## COURSE SCHEDULE

### DAY 1

9.00am - 10.00am	<i>REGISTRATION &amp; BREAKFAST</i>
10.00am - 10.45am	<b>Session 1: Principles (Mollier Chart)</b> <ul style="list-style-type: none"> <li>• Refrigeration Cycle</li> <li>• Saturation Condition</li> <li>• Superheated Vapour</li> <li>• Subcooled Liquid</li> <li>• Saturated Vapour Tables</li> <li>• Vapour Compression Refrigeration System</li> <li>• Pressure-Enthalpy Diagram</li> <li>• Refrigeration Process Analysis</li> <li>• Work Examples</li> </ul>
10.45am - 11.15am	<b>Session 2: Capillary Tubes</b> <ul style="list-style-type: none"> <li>• Operation</li> <li>• Applications</li> <li>• Capacities</li> <li>• Liquid Length, Bubble Point &amp; Two-Phase Length</li> <li>• Limitation</li> <li>• Starvation &amp; Overfeeding</li> <li>• Selection</li> </ul>
11.15am - 11.30am	<i>MORNING TEA BREAK</i>
11.30am - 12.00am	<b>Session 3: Thermostatic Expansion Valves</b> <ul style="list-style-type: none"> <li>• Basic Construction</li> <li>• Operation</li> <li>• Application</li> <li>• Degree of Superheat</li> <li>• Equalizers</li> <li>• Location of Remote Bulb</li> <li>• Adjustment of Superheating Setting</li> <li>• Field Services</li> </ul>
12.00pm - 12.30pm	<b>Session 4: Evaporators</b> <ul style="list-style-type: none"> <li>• Types of Evaporators</li> <li>• Types of Construction</li> <li>• Finned Coils</li> <li>• Evaporating Circuits</li> <li>• Pressure Drops</li> <li>• Vapour Velocity</li> <li>• DX Coils &amp; Chilled-Water-Coils</li> </ul>
12.30pm - 2.00pm	<i>LUNCH</i>

# Air Conditioning & Refrigeration Systems

## COURSE SCHEDULE

2.00pm - 2.30pm	<b>Session 5: Condensers</b> <ul style="list-style-type: none"><li>• Types of Condensers</li><li>• Operation Principles</li><li>• Applications</li><li>• Air-Cooled Condensers</li><li>• Water-Cooled Condensers</li><li>• Flow-Rate Calculation</li><li>• Heat Rejection</li><li>• Non-Condensing Gases</li></ul>
2.30pm - 3.00pm	<b>Session 6: Compressors</b> <ul style="list-style-type: none"><li>• Types of Compressors</li><li>• Operation Principles</li><li>• Reciprocating Compressors</li><li>• Rotary Vanes Compressors</li><li>• Screw Compressors</li><li>• Centrifugal Compressors</li><li>• Application</li></ul>
3.00pm - 3.15pm	<i>TEA BREAK</i>
3.15pm - 4.00pm	<b>Session 7: Maintenance</b> <ul style="list-style-type: none"><li>• Preventive Maintenance</li><li>• Cleaning Air-Cooled Condensers</li><li>• Maintenance of Water-Cooled Condensers</li><li>• Maintenance of Evaporators</li><li>• Maintenance of TEV</li><li>• Refrigerant Leaks</li><li>• Compressors Failure &amp; Damage</li><li>• Noncondensable Gases</li><li>• Liquid Slugging Problems</li></ul> <b>Session 8:</b> <ul style="list-style-type: none"><li>• Reviews</li><li>• Question and Answer</li><li>• Conclusion</li></ul>
<i>END OF DAY ONE</i>	



**COURSE REGISTRATION FORM**

<b>Course title:</b> <b>Air Conditioning &amp; Refrigeration Systems</b>
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(✓ Please tick)

<input type="checkbox"/> <b>22<sup>nd</sup> March, 2017 (Wednesday)</b> Petaling Jaya, <i>Armada Hotel</i>
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**Company Information**

Company:	
Address:	
State/ Province:	
Zip/Postal Code:	
Country:	
Contact Person:	
Email:	
Phone:	

**Attendee Information**

Name (1)	
Job title:	
E-mail:	
Mobile/Tel No:	
Name (2)	
Job title:	
E-mail:	
Mobile/Tel No:	
Name (3)	
Job title:	
E-mail:	
Mobile/Tel No:	

**Registration Fee**

	Fee Before GST (6%)	GST (6%)	TOTAL
<b>Individual Fee</b>	RM800	RM48	RM848.00
<b>Group Fee</b> (3 or more delegates)	RM750	RM45	RM795.00

**Closing date:** 15<sup>th</sup> March 2017. An early bird discount of RM50 for payment received before 22<sup>nd</sup> February 2017.

**Payment**

Payment is to make payable to:  
**Applied Technology Group Sdn Bhd**  
**Public Bank Berhad (Malaysia)**  
 Account no: 3178247302  
 GST Registration Number: 000641294336

**Payment terms:**

Payment is required before the event. Once payment is received, your seat will be reserved. Registration fee includes lunch, refreshments and full training documentation as specified. Delegates may be refused admission if payment is not received prior to the event. The fee does not include hotel accommodation.

**Cancellation Policy**

All cancellation of registration must be made in writing. If you are unable to attend:

- A substitute delegate is welcomed at no additional charge.
- Your registration can be credited to a future event.
- You will receive a full refund less 10% administration charge if cancellation is received in writing more than 14 days before the event.
- No cancellations will be accepted within 14 days before the event start date. Full course documentation will however be sent to the delegate.

**Course Schedule**

Course starts at 10.00am and ends at 4.30pm daily. Please arrive at 9.00am to allow time to register and receive course materials.

**Please send completed form to:**

Fax to: **+603 5637 9945**  
 or Email to : [admin@apptechgroups.net](mailto:admin@apptechgroups.net)  
 For enquiry, please call: +603 5634 7905  
 Or refer to our website [www.apptechgroups.net](http://www.apptechgroups.net)

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