



# Physical 2 Day Seminar on Plumbing - Professional Competency Examination (PCE) on The Syllabus of Hydraulics - Design Considerations

BEM APPROVED CPD: Applying

REF NO:Applying

**Date** : 03 June - 04 June 2026 (Wednesday - Thursday)  
**Time** : 9.00 am - 5.30 pm  
**Speaker** : Ir. Gary Lim Eng Hwa  
**Venue** : CSETD & TUSTD, WISMA IEM, PJ

**CLOSING DATE : 29 May 2026**

### REGISTRATION FEE'S (subject to 8% SST)

|                                    | <b>ONLINE FEE)</b><br>(Log-in for registration & payment:<br><a href="http://www.myiem.org.my/member/login.aspx">www.myiem.org.my/member/login.aspx</a> ) | <b>NORMAL FEE</b><br>(By Email : Quotation & Invoice)<br>Email : <a href="mailto:syafiq@iem.org.my">syafiq@iem.org.my</a> |
|------------------------------------|---|---|
| IEM Student Members                | 250.00  | 280.00  |
| IEM Graduate Members               | 500.00  | 600.00  |
| IEM Corporate Members              | 800.00  | 900.00  |
| Non-IEM Members (Non of the Above) | 1300.00   | 1350.00   |

# SYNOPSIS : LEARNING KEY OUTCOME

At the end of the training course, participants should be able to:

- Proceed to the Professional Competency Examinations (PCE) Part B - Mechanical Engineering Syllabus 3.0 Hydraulics on the followings: a
  - SPAN Uniform Technical Guidelines (UTG)
  - b. BS 6700 withdrawn replaced by BS8558:2011 & BS EN806
  - °Design Considerations on Cold Water, Pressures, Pump Controls to multiple tanks concept
- Understand the OSHA CDM Regulation to ADDRESS RISKS at the design stage -
- Select the piping material amongst the many choices of plastic and metal
- Design concept to harvest rainwater, gravity feed to flushing cisterns, water conservation!!!
- Pressures and Pump Controls - Calculate the piping sizes
- Take preventive measures to minimize the impact of water hammer to the pipe lines by way of design and selection of the right equipment.
- Case Studies to illustrate the design considerations, able to DESIGN plumbing systems of a multistore buildings.

**Note: LIMITED to 25 participants only, they are required to bring along a scientific calculator to work on the case studies.**

## PROGRAMME OUTLINED

| TIME                | DAY 1   | TIME                | DAY 2  |
|---------------------|---|---------------------|--|
| 8.00 am - 8.30 am   | Registration  | 8.00 am - 8.30 am   | Registration   |
| 8.45am - 10.15am    | SPAN – Uniform Technical Guidelines (UTG) OSHCIM Requirements – Address the risks at the design stage | 09.10 am - 10.15 am | Case Study – Multi stage pumping systems in a high rise building                                     |
| 10.15 am - 10.45am  | Fundamental of Fluid Dynamics To apply the formula on pipe sizing                                     | 10.15 am - 10.45 am | Joining methods of plastic pipe Practical sessions to join PPR pipe, HDPE pipe and mechanical joints |
| 10.15 am - 10.45 am | Morning Tea Break   | 10.45 am - 11.00 am | Morning Tea Break  |
| 11.00 am -12.30 pm  | Pump sizing and case studies Cold water demand and storage tanks.                                     | 11.00 am -01.00 pm  | Water hammers and preventive measures  |
| 12.30 pm - 1.30 pm  | Lunch Break   | 01.00 pm - 02.00 pm | Lunch Break  |
| 1.30 pm - 2.45pm    | System design, direct VSD & pneumatic Sizing of pneumatic tank  | 02.00 pm - 03.30 pm | Concept of Rainwater Harvesting for Toilet flushing  |
| 2.45 pm - 3.30 pm   | Choice of plastic pipes and friction loss   |                     |  |
| 03.30 pm -03.45 pm  | Afternoon Tea Break   | 03.30 pm -03.45 pm  | Afternoon Tea Break  |
| 03.45 pm - 05.15 pm | Using Tables from BS6700 calculate pipe size, case study  | 03.45 pm - 05.00 pm | Installation and Commissioning of Plumbing systems   |
| 5.15pm - 5.30 pm    | <ul style="list-style-type: none"> <li>• Q&amp;A Session</li> <li>• End of Day 1</li> </ul>           | 05.00 pm - 05.30 pm | <ul style="list-style-type: none"> <li>• Q&amp;A Session</li> <li>• End of Day 2</li> </ul>          |

# SPEAKER'S PROFILE



## **Ir. GARY LIM ENG HWA**

**BE(Mech.) NZ, Mgt Dip. FIEM, P.Eng, Asean Eng. AT 31000**

Ir Gary Lim is an experienced and qualified Professional Engineer with over 20 years of manufacturing experience in these areas; Industrial Engineering (Work Study), Project Management, Maintenance, Production and Factory Management. The 20 years of his work spanned over various industries namely industrial chemicals, dairy products, jam, sauces, chocolates, confectionnaires, industrial gases (liquid nitrogen, oxygen, argon, etc), blow moulding of plastic containers and paint manufacturing (highly fire hazardous). In the dairy industry involved in the design of Clean-In-Place (CIP) system of the process pipings.

His last 14 years of his working experience was with a multinational insurance company where he received further training in the area of Fire Engineering from an insurer perspective, started as the Risk Engineer and retired as the Risk Manager of the MNC insurer. He attended a course from HSB Industrial Risk Insurers at Hartford, United States of America on the Implementing The Concepts of Industrial Fire Control in August 1998. He also attended The Insurance School (Non-Life) of Japan Advance Course on Risk Management in year 2008 and was presented a Diploma. In 2016, he obtained the Approved ISO31000 Lead Trainer status from the Global Risk Management Institute Standards -G31000

Gary had conducted numerous risk management surveys of various industries from wafer plant to power plants. Currently, a council member and committee member of the Building Services Technical Division and member of the Fire Advisory Board of the Institution of Engineers, Malaysia. He has a degree in Mechanical Engineering from the University of Canterbury, New Zealand and a Management Diploma from New Zealand Institute of Management. He is a Professional Engineer registered with the Board of Engineers, Malaysia and a Fellow of the Institution of Engineers, Malaysia (IEM).

Currently, he conducts courses regularly on the concepts and **DESIGN** in the area of Fire Engineering, Sanitary Systems and Plumbing Engineering at IEM.

### **Cancellation Policy**

No cancellation will be accepted prior to the date of the event. However, replacement or substitute may be made at any time with 7 days prior notification and substitute will be charged according to membership status.

### **Personal Data Protection Act**

I have read and understood the IEM's Personal Data Protection Notice published on IEM's website at <http://www.myiem.org.my> and I agree to IEM's use and processing of my personal data as set out in the said notice.

# REGISTRATION FORM

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 03 - 04 June 2026 **Closing Date : 29 May 2026**  
 Email : syafiq@iem.org.my

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| NAME                   | MEMBERSHIP NO. | NRIC | FEES (RM) |
|------------------------|----------------|------|-----------|
|                        |                |      |           |
|                        |                |      |           |
|                        |                |      |           |
| Sub Total:             |                |      |           |
| SST Added 8% :         |                |      |           |
| Total Amount Payable : |                |      |           |

**Organisation :** .....

**Contact Person :** .....

**Position:** .....

**Billing Address:** .....

.....

**Company Registration No :** ..... **Tax Identification (TIN no) :** .....

**Contact Details: Office No:** .....

**Email Address:** .....

**Date Submitted :** ..... **Handphone No:** .....

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