Induction Course for new C&S Engineers

26 – 28 May 2025

(9.00 a.m. to 5.30 p.m.)

Hotel Armada Petaling Jaya
Lot 6, Lorong Utara C, Section 52
46200 Petaling Jaya

Organised by

The Association of Consulting Engineers Malaysia

REGISTRATION

Please click the link or scan QR code for ONLINE REGISTRATION

https://kliksini.my/A2ZA7

Objective

1. Introduce Professional C&S Consulting Engineering Service to new C&S Engineers.
2. Guide to further enhance the civil and structural engineers' skills in the engineering design environment.

Target Audience

Civil or Structural engineers with less than 2 years' experience and new Civil or Structural engineers in government and semi-government departments assigned to civil or structural engineering design works.

Language / Course Notes

English will be used for the course and course materials. Participants will receive the course notes in electronic format.

Registration Fee

ACEM member firms	RM 900.00 per person
Others	RM 1,000.00 per person

Registration is on a first-come, first-served basis and will close upon reaching the maximum number. Fee must be settled in full before commencement of course.

Fee will not be refunded for any cancellation. However, substitution of participants can be arranged by informing the ACEM secretariat one week before the course commences.

Closing date for registration is **21 May 2025.**

Continuing Professional Development

The course is eligible for 18 CPD hours for Registered Persons with the Board of Engineers Malaysia.

Certificate of Attendance

Certificate of Attendance will be issued to participants, subject to full attendance.

Enquiries

For further enquiries, please contact the ACEM secretariat at tel. no. 012-5290031 or e-mail vivien@acem.com.my.

Course Contents

PROFESSIONAL PRACTICE

1. Laws and Regulations Governing the Engineering Profession
   - 1.1 The Registration of Engineers Act & Registration of Engineers Regulations.
   - 1.2 Overview of Laws having relevance to the practice of Engineering ('Local Council Act', 'Town Planning Act', 'Roads, Drainage & Building Act', UBBL, 'Fire Services Act' etc) (list and brief description of function only).
   - 1.3 Overview of manuals and technical standards mandatory under statutory requirements (MSSM, SPAN Guidelines, JKR Arahan Teknik, LLM Codes) (list and brief description only).
   - 1.4 Route to registration as P.Eng.

2. Concept of Professionalism and Engineer's Responsibility Towards Society & the Public
   - 2.1 Four key concepts in Professionalism (public interest, fiduciary interest, professional conduct, expert knowledge).
   - 2.2 Code of professional conduct.
   - 2.3 The regulated profession and the unregulated profession.
   - 2.4 Introduction to Civil Law Act, basic principles of torts, duty of care required of a professional, 'good samaritan syndrome', fit-for-purpose etc.
   - 2.5 Common issues of Professional Conduct (letter of release, taking-over and supplanting, conflict of interest, responsibility in SI etc).

SITE INVESTIGATION FOR BUILDINGS AND CIVIL WORKS

1. Introduction
   - 1.1 What is SI and Why we need it?

2. Procedures

3. Planning of SI
   - 3.1 Extent of SI, Spacing of Boreholes, Frequency, Termination Criteria, etc.

4. Field Tests (In-Situ) & Laboratory Tests
5. SI Site Supervision
6. Summary

INTERPRETATION OF FIELD & LABORATORY TESTS RESULTS FOR DESIGN

1. Introduction
   - 1.1 Why Need Interpretation?

2. Interpretations
   - 2.1 Field Tests
   - 2.2 Laboratory Tests

3. Design Parameters
4. Common Issues
5. Summary

STRUCTURES

1. Structural Analysis
   - 1.1 Materials / Cross Sectional Properties
   - 1.2 Methods of Structural Analysis
   - 1.3 Stiffness Method
   - 1.4 Approximate Methods

2. Concrete Design
   - 2.1 Durability and Fire Resistant
   - 2.2 Testing of Steel / Concrete
   - 2,3 Analysis and Design of Selected Structural Elements, Beams, Slabs, etc.
   - 2.4 Other Design Considerations

3. Some Aspects of Structural Steel Design in Practice

EARTHWORKS

1. Introduction
   - 1.1 Preliminary
   - 1.2 Layout
   - 1.3 Soil data
   - 1.4 Survey information

2. Design
   - 2.1 Preliminary
   - 2.2 Design criteria
   - 2.3 Submissions

3. Construction Stage
   - 3.1 Setting out
   - 3.2 Site clearing
   - 3.3 Temporary drainage
   - 3.4 Silt traps
   - 3.5 Compaction requirement
   - 3.6 Rock blasting
   - 3.7 DOE requirement
   - 3.8 Site monitoring and control

4. Other Consideration
   - 4.1 Retaining walls
   - 4.2 Maintenance of completed platforms
   - 4.3 Erosion control

ROADS

1. Introduction
   - 1.1 Ancient roads
   - 1.2 Modern roads

2. Roads in Malaysia
   - 2.1 Road development
   - 2.2 Road classification and administration
   - 2.3 Design guidelines and standards
   - 2.4 Road classification/Hierarchy
   - 2.5 Design standards and roads

3. Route Selection and Planning
   - 3.1 Traffic study
   - 3.2 The reconnaissance survey
   - 3.3 Land

4. Design Control and Criteria
   - 4.1 Topography and land use
   - 4.2 Traffic
   - 4.3 Design vehicle characteristics
   - 4.4 Speed
   - 4.5 Capacity

5. Elements of Design
   - 5.1 Sight distance
   - 5.2 Horizontal alignment
   - 5.3 Vertical alignment
   - 5.4 Combination of horizontal and vertical alignment
   - 5.5 Cross section elements
   - 5.6 Other elements affecting geometric design

6. Junction Design
   - 6.1 Design of at-grade intersections
   - 6.2 Design of interchanges

7. Cost Estimate

DRAINAGE

1. Introduction

2. Hydrological Concepts

3. Rapid Disposal vs. Control-at-Source

4. Urbanisation and its impact on Runoff

5. Water Quantity and Water Quality Management

6. Design of Drainage Systems
    - 6.1 Design Average Recurrence Interval (ARI)
    - 6.2 Flood estimation
    - 6.3 Hydraulic analyses
    - 6.4 OSD, detention and retention storages
    - 6.5 Flood routing analyses

7. MSMA and MSMA2

8. Erosion and sediment control measures

9. Drainage Analyses and Design Software

TRAFFIC

1. Traffic Impact Assessment
    - 1.1 Introduction
    - 1.2 Technical guidelines
    - 1.3 Categories of assessment

2. Transport Planning
    - 2.1 Trip generation
    - 2.2 Trip distribution
    - 2.3 Trip assignment
    - 2.4 Modal choice
    - 2.5 Parking studies

3. Capacity and level of service concept
    - 3.1 Unsignalised junctions and intersections
    - 3.2 Signalised junctions and intersections
    - 3.3 Roadway
    - 3.4 Other transportation facilities

WATER SUPPLY

1. Guidelines for water supply submission
    - 1.1 Introduction
    - 1.2 Preliminary stage
    - 1.3 Where to submit water supply application

2. Procedures for submission of water supply application

3. Application and Approval Stage
    - 3.1 Application for water supply
    - 3.2 Processing and approval by Water Authority
    - 3.3 Submission of proposed design, document and plans
    - 3.4 Approval of design, document and plans

4. Construction and supervision stage

5. Testing and turning-on of water supply

6. Handing over stage

7. Technical Requirement for Water Supply Installations
   - 7.1 General
   - 7.2 Water demand, design criteria
   - 7.3 Materials in water supply reticulation installation
   - 7.4 Booster pumping station
   - 7.5 Service reservoirs and trunk mains

8. Internal plumbing

SEWERAGE

1. Introduction
   - 1.1 Preliminary
   - 1.2 Authorities' requirement
   - 1.3 Submission

2. Design Stage
   - 2.1 Preliminary design
   - 2.2 Design criteria
   - 2.3 Preparation of drawings
   - 2.4 Submission to Authorities

3. Central Sewage Treatment Plants
   - 3.1 Types of approved systems

4. Construction Stage
   - 4.1 Control of workmanship
   - 4.2 Water tightness testing
   - 4.3 Handing over to IWK

COURSE LECTURERS

Ir. Dr. Chan Swee Huat	*Geo-Excel Consultants Sdn Bhd*
Ir. Dr. Gue Chang Shin	*G&P Geotechnics Sdn Bhd*
Ir. Dr. Lee Yun Fook	*Sepakat Setia Perunding (Sdn) Bhd*
Ir. Liam We Lin	*RPM Engineers Sdn Bhd*
Ir. Ng Ken Seng	*Perunding ZKR Sdn Bhd*
Ir. Ravi Shankar	*Perunding Trafik Klasik Sdn Bhd*
Ir. Walter Sim Kian Joo	*LYS Consult Sdn Bhd*
Ir. Dr. Tee Horng Hean	*Alam Jurutera Perunding*
Ir. Zolkarnain bin Abd Rahim	*Sepakat Setia Perunding (Sdn) Bhd*

(Course lecturers are subject to change without prior notice)