

Induction Course for new C&S Engineers

26, 27 & 28 March 2018

(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

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 a thumb drive each, containing the course notes in PDF format. Participants may bring their own laptop (fully charged) to view the notes.

Registration Fee *(inclusive of 6% GST)*

ACEM member firms	RM 954.00 per person
Others (payment received by/before 19 March 2018)	RM 1,060.00 per person
(payment received after 19 March 2018, <u>including</u> Government Local Order)	RM 1,113.00 per person

Registration is on a first-come, first-served basis and will close upon reaching the maximum number. Registration fee must be submitted together with the registration form. Payment by crossed cheque is to be issued to '**The Association of Consulting Engineers Malaysia**'.

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.

Completed registration forms should be returned to the ACEM secretariat by **19 March 2018** to the following address:

The Association of Consulting Engineers Malaysia
Suite 20-9, Level 20, Menara 1MK
No. 1, Jalan Kiara, Mont' Kiara, 50480 Kuala Lumpur

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, 012-5190031, 03-62110031 or e-mail sec@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 (GEOTECHNICAL) INVESTIGATION FOR BUILDING AND CIVIL WORKS

1. Guidelines and Codes of Practice
2. Objectives, Stages, Scope and Planning of Geotechnical Investigation
 - 2.1 Civil works
 - 2.2 Building works
3. Investigation Methods and Procedures
 - 3.1 Preliminary investigation
 - Surface/Topographical maps
 - Geological maps
 - Site history and reconnaissance
 - 3.2 Field measurement/instrumentation
 - 3.3 Measurement of properties in laboratory
4. Interpretation of Field and Laboratory Data
5. Geotechnical Data for the Design of Sub-Structures of Building Works
 - 5.1 Shallow foundation
 - 5.2 Deep foundation
 - 5.3 Basement

6. Geotechnical Data for the Design of Civil Works
 - 6.1 Retaining walls
 - 6.2 Slope stability
 - 6.3 Embankments
 - 6.4 Underground openings
 - 6.5 Marine structures, waterfront structures

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. Cheah Seuk Poh	<i>Jurutera Perunding Tegas Sdn Bhd</i>
Ir. Chen Chean Sin	<i>SSP Geotechnics Sdn Bhd</i>
Dato' Ir. Dr. Gue See Sew	<i>G&P Geotechnics Sdn Bhd</i>
Ir. Liam We Lin	<i>RPM Engineers Sdn Bhd</i>
Ir. Dr. Lee Yun Fook	<i>Sepakat Setia Perunding Sdn Bhd</i>
Ir. Ng Ken Seng	<i>Perunding ZKR Sdn Bhd</i>
Ir. Ravi Shankar	<i>Perunding Trafik Klasik Sdn Bhd</i>
Ir. Walter Sim Kian Joo	<i>LYS Consult Sdn Bhd</i>
Ir. Dr. Tee Horng Hean	<i>Alam Jurutera Perunding</i>

(Course lecturers are subject to change without prior notice)

Registration Form
(to be returned by 19 March 2018)

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Name (in full): _____

Designation: _____ Years of working experience: _____

Organisation: _____

Address: _____

Tel.: _____ Contact Person: _____

E-mail: _____

(confirmation of registration will be sent via e-mail)

ACEM member firm RM 954.00 per person

Others RM 1,060.00 per person
(payment received by/before 19 March 2018)

including Government Local Order) RM 1,113.00 per person
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Enclosed is cheque no. _____ for RM _____ being registration fee for the course (*cheque is to be issued to 'The Association of Consulting Engineers Malaysia'*).

Signature & Company Stamp

Date