MSMA2 & ESCP: Practical Hands-On Training Bootcamps 2026

HRDC Claimable !

VENUE : Kuala Lumpur & Kuching

DATES : Nov (KCH), Dec (KL) - 2026

DETAILS: http://workshops.msmam.com

Accredited by HRDC & BEM with 7 CPD Hours Per Day #

Workshop Conducted by: Ir. Dr. Quek Keng Hong

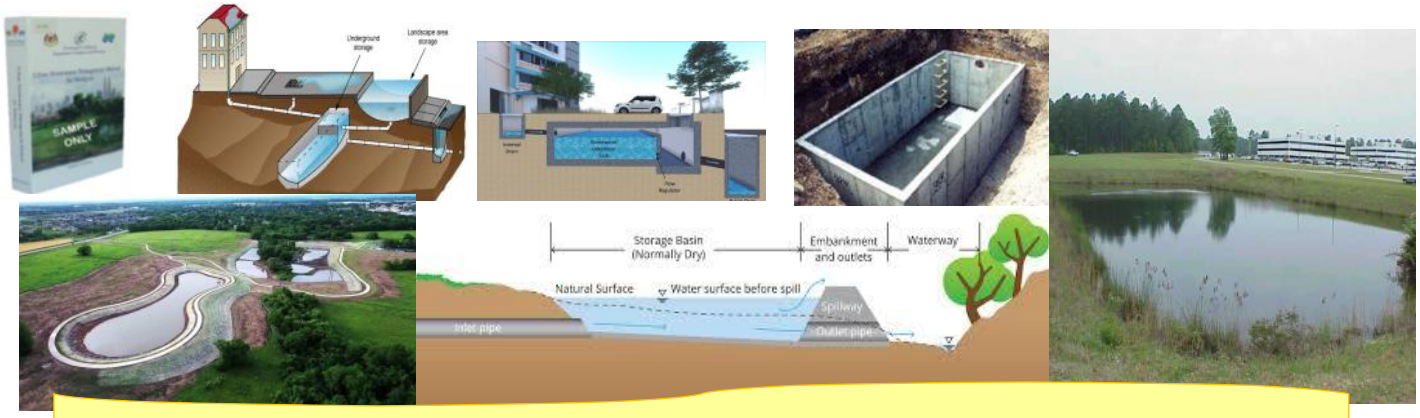


KEY TOPICS COVERED IN THE BOOTCAMPS:

- ⇒ Urban Stormwater Management Manual for Malaysia (MSMA2).
- ⇒ Learn via Practical Hands-On Case Studies on how to Optimize the Design of On-Site Detention (OSD) & Detention Basins to meet the Requirements of the Approving Authorities, using laptop PC and Excel spreadsheet templates which you can use for your work (worth RM2,380).
- ⇒ Preparation of Erosion and Sediment Control Plan (ESCP).
- ⇒ Hydrologic and Hydraulic Modelling for Urban Drainage System.
- ⇒ Practical Hands-On Design Class on Drainage System, OSD & Detention Basins.







Download Free MSMA2 Spreadsheets @ http:// free1.msmam.com



CONTENT OF WORKSHOPS A,B,C,D,E,F



MSMA2 Workshop A- MSMA2 Basics I- Design Requirements, Procedures & OSD Design

(Preview Video: http://wsav.msmam.com)

- **You will learn from scratch via a real case study how to optimize your design of On-Site Detention (OSD) using PC and spreadsheet templates to meet the requirements of Approving Authorities.**
- **Day 1:** Introduction to MSMA. Concept of major/minor storms. Design storm ARI's. Changes between the first and second editions of MSMA in terms of key design parameters including: storm intensities, temporal patterns, design peak discharges, and storage volumes of OSD, detention basins and sediment basins.
- **Day 2:** Hands-on training on how to perform basic hydrological computations using Excel spreadsheets. Three basic computations involving rainfall and runoff in MSMA are covered: (1) Design storm IDF (Intensity-Duration-Frequency) curves and temporal patterns, (2) Design peak discharges via the Rational Method and (3) Design hydrograph via the Time-Area Method. Participants will learn through step-by-step worked examples.
- **Day 3:** Design of OSD (On-Site Detention) using three different approaches: Swinburne's Method (SM) in MSMA1, Approximate Swinburne's Method (ASM) in MSMA2 and Exact Swinburne's Method (ESM). ASM generally gives about 2-3 times higher SSR (Site Storage Requirement) than SM, while ESM appears to give more realistic estimates of SSR. Participants will perform the design of the OSD based on the spreadsheet templates given to them.

MSMA2 Workshop B- MSMA2 Basics II- Design of Detention Basin (Pre-Requisite: Workshop A)

(Preview Video: http://wsbv.msmam.com)

- **You will learn from scratch via a real case study how to optimize your design of detention basin using PC and spreadsheet templates to meet the requirements of Approving Authorities.**
- **Day 1:** Introduction to the design of detention basin. The Level-Pool routing method is solved using spreadsheet. The solution requires an understanding of the storage and rating curves for the detention basin. Participants will learn to develop the storage curve from site survey data, and the rating curve based on the types of basin outlets.
- **Day 2:** Hands-on training on how to compute the inflow hydrographs of various ARI and durations to the detention basin by combining the design storm and the Time-Area Method spreadsheets in Workshop A. The design storm spreadsheet computes the design storms for input to the Time-Area Method spreadsheet that generates the inflow hydrographs to the detention basin, which are then routed through the detention basin via the Level-Pool routing spreadsheet to give estimates of the outflow hydrographs and water levels.
- Workshops A and B are inter-related. You must attend Workshop A before you can attend Workshop B.

MSMA2 Workshop C- Practical Guide to the Preparation of Erosion and Sediment Control Plan (ESCP) for Engineers

(Preview Video: http://wscv.msmam.com)

- **Day 1**: Introduction to ESCP in MSMA2. Rules and regulations on erosion and sediment control. Erosion and sedimentation processes. Erosion and sediment control principles. Erosion and sediment control BMPs including erosion control BMPs, runoff management BMPs and sediment control BMPs.
- **Day 2**: Participants will learn how to estimate soil loss using the Universal Soil Loss Equation (USLE) and sediment yield using the Modified Universal Soil Loss Equation (MUSLE). They will also learn about stormwater management in erosion and sediment control including the computation of design storm intensities and peak discharges based on the Rational Method. Participants will also learn to design wet/dry sediment basins using spreadsheets.
- **Day 3**: Preparation of Erosion and Sediment Control Plan and ESCP site inspection checklist. On Day 3, participants will be divided into groups to undertake a real case study involving a large mixed development project in an environmentally sensitive area. Each group will prepare a report and an ESCP Plan for the project site.

MSMA2 Workshop D- MSMA2 Basics III- Hydrologic & Hydraulic Modelling Using HEC-HMS & HEC-RAS by US HEC

(Preview Video: http://wsdv.msmam.com)

- **Day 1:** Hydrologic Modelling using HEC-HMS software. The concept of runoff routing and when it is applied to compute the runoff hydrograph from a catchment. Theories of hydrologic modeling in HEC-HMS Model. The free public domain software which is recommended in MSMA is developed by the US Army Corps of Engineers Hydrologic Engineering Center. HEC-HMS can be used together with HEC-RAS model to estimate flood hydrographs and levels based on backwater curves analysis. This approach is commonly used in flood studies and in designs or analyses involving long channels and rivers.
- **Day 2:** Hydraulic Modelling using HEC-RAS software. The concept of backwater computation and when it is applied to compute flood levels. Find out how to perform backwater curve analysis using HEC-RAS. Covers the theory of hydraulic modeling using HEC-RAS. Principles of solving energy equation using standard step method.
- **Day 3:** Practical hands-on training using HEC-HMS and HEC-RAS software based on a real case study. Learn how to apply the HEC-HMS and HEC-RAS models via practical worked examples. Participants will learn through a step-by-step guide how to perform data preparation, calibration and validation, analysis, error debugging using the online help, plotting graphs, generating output data and interpretation of results.
- Note: US HEC is the U.S. Hydrologic Engineering Center in the U.S. Army Corp of Engineers.

MSMA2 Workshop E– Practical Hands-On Hydrological Design and Analysis Bootcamp I- How to Design and Analyse A Typical Drainage System from Scratch? (Pre-Requisite: Workshop A) (Preview Video: http://wsev.msmam.com)

- **You will learn to perform basic hydrological analysis and design of a typical drainage system from scratch.**
- **Day 1**: Participants will do real design and analysis of a typical drainage system from scratch using topographical map and survey plan provided. They will perform storm analysis using MSMA (2011), HP (2021) or HP26 (2018), compare and assess the values to be adopted. They will demarcate the catchment boundaries on the topo map, identify the isochrones, extract the catchment parameters like area, stream length and derive the Time-Area curve for pre and post -development scenarios for Day 2.
- **Day 2**: Based on the parameters derived on Day 1, they will compute the design storm and hydrographs for Rational Method and Time-Area Method. They will perform the design of a drainage system consisting of culverts and open channel drains using the HEC-RAS Model by US Army Corp of Engineers. They will include the results in a drainage design report to be presented in Day 3.
- **Day 3**: Participants will perform hydrological analysis using the HEC-HMS Model by US Army Corp of Engineers. They will demarcate the catchment and subcatchment areas from topo map and extract relevant information like area and stream lengths. They will then develop a HEC-HMS model from scratch and calibrate it using HP11. After calibration, the Model is used to generate the design discharges at the catchment outlet. The results will be included in the drainage design report which will be presented. They will present the final design in AutoCad drawings, complete the drainage design report and do a presentation at the end of Day 3 to the class.

MSMA2 Workshop F- Practical Hands-On Hydrological Design and Analysis Bootcamp II- How to Design On-Site Detention (OSD) and Detention Basin from Scratch? (Pre-Requisite: Workshop B) (Preview Video: http://wsfv.msmam.com)

- **You will learn to design an OSD and Detention Basin from scratch for a real case study.**
- **Day 1**: Participants will perform the design On-Site Detention (OSD) and Detention Basin for a real project site from scratch using topographical map and survey plan provided. They will perform storm analysis using MSMA (2011), HP (2021) or HP26 (2018), compare and assess the values to be adopted. They will design the OSD using the Approximate Swinburne Method in MSMA (2011) and the Exact Swinburne Method. They will compare the results and adopt the more optimized design.
- **Day 2**: For the design of the Detention Basin, they will compute the pre and post-development hydrographs of various A.R.I. (Average Recurrence Intervals), derive the rating and storage curves for the basin and then perform Level-Pool Routing using spreadsheet templates provided. They will learn how to interpret the results
- **Day 3**: They will continue the design of the detention basin by doing trial and error until they find an optimized solution which fulfills the requirement that the post development peaks must be less than or equal to the pre-development peaks. They will present the final design in AutoCad drawings, complete the drainage design report and do a presentation at the end of Day 3 to the class.

PRE-REQUISITES FOR WORKSHOPS A,B,C,D,E,F

Workshop No:	Workshop Titles:	Pre-Requisite:
A	MSMA2 Basics I- Design Requirements, Procedures & OSD Design	Nil
B	MSMA2 Basics II- Design of Detention Basin	A
C	Practical Guide to the Preparation of Erosion and Sediment Control Plan (ESCP) for Engineers	Nil
D	MSMA2 Basics III- Hydrologic & Hydraulic Modelling Using HEC-HMS & HEC-RAS by US HEC	Nil
E	Practical Hands-On Hydrological Design and Analysis Bootcamp I- How to Design and Analyse A Typical Drainage System from Scratch?	A
F	Practical Hands-On Hydrological Design and Analysis Bootcamp II- How to Design On-Site Detention (OSD) and Detention Basin from Scratch?	B

KEY BENEFITS OF ATTENDING WORKSHOPS A,B,C,D,E,F

- You will learn via real case study how to optimize your design of On-Site Detention (OSD) and detention basin using PC and spreadsheet templates to meet the requirements of Approving Authorities.
- You will learn how to optimize your design of On-Site Detention (OSD), detention basin and sediment basins.
- You will learn a different approach of computing OSD that will reduce the storage significantly compared to MSMA2.
- Learn how to prepare an ESCP by working in small groups using a real case study of a mixed development site.
- Learn about hydrologic and hydraulic modelling using Free Public Domain Software HEC-HMS and HEC-RAS which are both recommended software in **MSMA**.
- Practical hands-on design class on a typical drainage system with OSD & Detention Basins (see Workshops E and F).
- Workshop conducted by Ir. Dr. Quek Keng Hong- an expert with 30 years of industry experience in drainage design.
- You will apply the theories you learned to solve real design problems using spreadsheet templates on your own laptop PC in the workshop.
- You will get Excel spreadsheet templates worth more than RM2,380 for free which you can use in your work.
- You will gain 7 CPD hours per day (#pending) by attending the workshops.
- You can claim under HRD Corp for attending the workshop. Please refer to the FAQ @ http://hrdcorpfaq.msmam.com
- Participants have lifetime access to a shared gDrive folder where they can get free tools, references, resources, worked examples and spreadsheet templates. There is also a Facebook Page for participants where we share info on MSMA after the workshop.
- You will get special discount for **MSMA**ware Online Software at the workshop. Details: http://welcomeVideo.msmaware.com.

REGISTER ONLINE (http://MSMA2workshopForm.msmam.com)

Dr. Quek & Associates - An Accredited Training Provider for HRD Corp & BEM CPD Program.

Office Address: No. Block C 3-3, Setia Walk, Persiaran Wawasan, 47160 Puchong, Selangor D.E., Malaysia.
Enquiries (WhatsApp): 012-2812590, Email: workshops@msmam.com, Website: http://workshops.msmam.com.

You do not have to complete and email this form to us! – You must register via the Google Form @ http://MSMA2workshopForm.msmam.com

Participant Name:	Workshop No:	Venue:	Email Address:	H/Phone No:
(1) :				
(2) :				
(3) :				

Table 1: MSMA2 Workshop Dates and Venues

VENUE	Kuching	Kuala Lumpur
WORKSHOP	November 2026	December 2026
A	2, 3, 4 Nov	30 Nov, 1, 2 Dec
B	5, 6 Nov	3, 4 Dec
C	9, 10, 11 Nov	7, 8, 9 Dec
D	12, 13, 16 Nov	14, 15, 16 Dec
E	17, 18, 19 Nov	21, 22, 23 Dec
F	20, 23, 24 Nov	28, 29, 30 Dec

Table 2: Workshop Fees (Early Bird + Group Discount)

N **	Workshop A, C, D, E, F (Fee in RM)			Workshop B (Fee in RM)		
	1*	2*	3*	1*	2*	3*
5	1700	3060	4080	1133	2040	2720
4	1800	3240	4320	1200	2160	2880
3	1900	3420	4560	1267	2280	3040
2	2000	3600	4800	1333	2400	3200
1	2100	3780	5040	1400	2520	3360
0	2200	3960	5280	1467	2640	3520
HRDF	2640	4752	6336	1760	3168	4224

Note 1: * No of Participants (Table 2). To enjoy the above **Special Early Bird & Group Discounts**, full payment must be received within 7 days after registration.
2. ** **N** is the no. of months before the Workshop month (Table 2). For example, since the first day of Workshop D in Kuala Lumpur falls on 14-12-2026, the Workshop month is Dec (12). If you pay in July (7), then **N**=12-7=5. The fee for 2 participants is RM3,060. If you pay in Oct, then **N**=12-10=2. The fee for 2 participants is RM3,600. If you pay in Nov, **N**=12-11=1. The fee is therefore RM3,780. However, the HRDF rate is fixed at RM4,752.
3: HRD Corp rates is based on the bottommost row (in green) in Table 2. Please refer to the FAQ @ http://hrdcorpfaq.msmam.comon how to claim under HRDC.
4: You must choose any one of the following methods of payment:
Method A- Direct Bank-In- Bank in cash / cheque / transfer funds within 7 days to: **Maybank Account No: 512343-730234 payable to DRQUEK & ASSOCIATES**.
Method B– Pay by LO Payment- If you wish to pay by government LO please send us an official letter signed by your *Pengarah*.
Method C- Pay via HRD Corp Claimable Courses. Please submit claim for 30% as pre-payment from HRDC as per the FAQ.
5: You can upload bankin slips, letters requesting payment via LO and letters from HRD Corp in Google Form under: "**SUBMIT DOCUMENTS HERE**" Section.
6: Any comments can be added to Google Form under "**ANY QUESTIONS/COMMENTS**" Section.
7: You can access the Google Form any time after registration using the same link (http://MSMA2workshopForm.msmam.com)- as long as you log into Google when you first register and whenever you access the Form. If you didn't log into Google when you first register, you must not clear your browser cache, else you must re-register.

ABOUT WORKSHOPS A,B,C,D,E,F

- Workshops A, B, C, D, E & F will be held in Kuala Lumpur and Kuching on the dates shown in Table 1.
- Special discount for early birds and group discounts for companies are as shown in Table 2.
- Lecture notes will be provided. No meal is provided each day.
- Workshops start at 8:30 am and finish at 5:30 pm daily.
- Please check our website http://workshops.msmam.com for updated details about the Workshop.
- Payment and Refund Policy: Full payment must be received within 7 days after booking via email. Money paid is not refundable, but a substitution may be made at any time. The Organiser reserved the right to propose an alternative date instead of a refund- if the workshop is postponed for whatever reasons.
- We will email/WhatsApp the ***Final Workshop Details*** (with map of venue and schedule) two weeks before the Workshop date– once the workshop is confirmed. Please confirm your attendance by replying to the ***Final Workshop Details*** email.
- Please make your flight and hotel booking only after you have received the *Final Workshop Details* from us.
- Payment receipts and certificates of attendance will be issued to all participants at the workshop.
- Workshop is accredited by BEM with 7 CPD Hours per day (#Pending)
- In order to quality for the CPD hours, BEM requires all participants to sign their attendance daily.
- Any enquiries, please email us at workshops@msmam.com or call/WhatsApp us at 012-2812590.

Workshop Conducted By: Ir. Dr. Quek Keng Hong B.E. (CIVIL), M.Eng.Sc., Ph.D. (NSW)



If you use **MSMA**, you probably heard about Dr. Quek. A well known expert on **MSMA** who has developed the **MSMA**ware software and numerous spreadsheet applications widely used by engineers in Malaysia. Dr. Quek received all his three degrees from the University of NSW, Australia– a university renowned for its research work in the field of hydrology. The university played a key role in the preparation of the stormwater management guideline for Australia i.e., the **Australian Rainfall and Runoff**. A consulting engineer by practice, he has three decades of experience in urban drainage design and has involved himself in many major infrastructural projects around the country. An outstanding leader in his field who, despite his busy schedule, still finds time to conduct regular workshops and seminars on **MSMA**. He has published more than 30 papers in his field of specialisation. Ir. Dr. Quek served as the chairman of the **Water Resources Technical Division** of **IEM** for two terms from 2003.