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REGISTRATION FORM

1-DAY COURSE ON LiDAR TECHNOLOGY WITH A CASE STUDY IN FLOOD RISK ASSESSMENTS & MITIGATION AND ITS APPLICATION IN ENGINEERING

(Closing Date: 16TH MARCH 2019)

No	Name	M'ship No.	Grade	Fee (RM)
			SUB TOTAL	
			TOTAL PAYABLE	

Enclosed herewith a crossed cheque No: _____for the sum of RM _____ issued in favour of "**The Institution of Engineers, Malaysia**" and crossed 'A/C payee only'. I/We understand that the fee is not refundable if I/We withdraw after my/our application is accepted by the Organising Committee as stated in the **cancellation term**. If I/We fail to attend the seminar, the paid registration fee will not be refunded.

Contact Person: _____ Designation:_____

Name of Organization: _____

Address: _____

_____

Telephone No.: _____(O) _____ (Fax)

_____ (H) _____ (HP)

Email: _____

_____ _____

Signature & Stamp Date

Photocopies are acceptable

CANCELLATION POLICY

IEM reserves the right to postpone, reschedule, allocate or cancel the course. Full refund if cancellation is received in writing more than 7 days before start date of the event. No cancellation will be accepted prior to the date of the event. However, replacement or substitute may be made at any time with prior notification and substitute will be charged according to membership status.

The Institution of Engineers, Malaysia

OPEN TO ALL

19th MARCH 2019

1 –DAY COURSE ON LiDAR TECHNOLOGY WITH A CASE STUDY IN FLOOD RISK ASSESSMENTS & MITIGATION AND ITS APPLICATION IN ENGINEERING

ORGANISED BY
WOMEN ENGINEERS SECTION, IEM

Venue: **C&S and TUS Lecture Room, 2nd Floor, Wisma IEM, Petaling Jaya, Selangor**

Time: **8.30am – 5.30pm**

Speaker: Ms. Trudy R. Ganendra & Dr. GS Ebrahim Taherzadeh Mobarakeh

BEM Approved CPD/ PDP hours: 7 **Ref. No.: IEM18/HQ/409/C**

REGISTRATION FEES	ONLINE	NORMAL
IEM Student Member	RM 100.00	RM 150.00
IEM Graduate Member	RM 250.00	RM 300.00
IEM Corporate Member	RM 400.00	RM 450.00
Non-IEM Member	RM 800.00	RM 900.00
SST shall be at 6% with effect from 1 March 2019		

IMPORTANT NOTES

- For ONLINE REGISTRATION, **payment** MUST BE MADE VIA ONLINE PAYMENT **[via RHB Now and Maybank2u -Personal Saving & Personal Current; Any Credit Card - Visa/Master].** If payment is not received within the stipulated time, the registration fee will automatically be reverted to the normal fee.
- Payment via **CASH/CHEQUE/BANK-IN TRANSMISSION/BANK DRAFT/MONEY ORDER/ POSTAL ORDER/LOU/LOG/WALK –IN** will be considered as **NORMAL REGISTRATION**
- **FULL PAYMENT must be settled before commencement of the event**, otherwise participants will not be allowed to enter the hall. If a place is reserved and the intended participant fails to attend the course, the fee is to be settled in full. If the participant failed to attend the course, the fee paid is non-refundable. IEM reserve the right to reject any LOU/LOG not in accordance with these instructions.

The Organising Committee reserves the right to alter or change the programme due to unforeseen circumstances.

SYNOPSIS

LiDAR surveying is being increasingly used worldwide for its accurate, cost effective, and fast acquisition of topographical and imagery data. It provides high resolution 3D data of large swaths of landscape at rates of dozens of square kilometers per hour, which can then be used create numerous products that are useful for many engineering, environmental, natural resource, and infrastructure applications. The technology has been in use in Malaysia since 1989, and its users have benefited from its many cost, accuracy, and speed advantages; one such user are flood management specialists.

Given that flooding is a common issue that Malaysia as a tropical country with two monsoon seasons frequently faces, management of flooding and flood waters is a constant requirement in order to prevent disasters and mitigate economic loss. Numerous places such as the Klang Valley and the Damansara River are prone to flash flooding during rainfall seasons, and understanding the landscape is crucial in fields such as determining where to build infrastructure, redirecting flood water, planning new construction and expansion of settlements, and so on. Climate change in the future is liable to increase the risks further, and will make said management even more important. To assist in this, airborne LiDAR data can be utilized to build Digital Surface Models that indicate what the ground surface looks like, which can then be used to analyze drainage flow patterns and perform volume calculations.

Despite its power, poor understanding of LiDAR and its data can lead to inferior analyses and utilization, and oftentimes the full potential of the data is unrealized. There are numerous nuances in the management and utilization of LiDAR data that changes depending on the quality and resolution of the data, as well as the specific applications that it's being used for. This course will teach attendees the principles of LiDAR and how to effectively use it, and will include a hands-on practical exercise using popular freeware for LiDAR data. (Participants must bring their own laptop for these purposes).

COURSE OUTLINE:

Engineers and related staff who are working in the following fields:

- Dam
- Water Supply and Flood Management
- Telecommunications & Other Urban Planning
- Road
- Mining
- Forest/Habitat Assessment
- Slope Stability
- Pipeline
- Railway
- Transmission Line

Benefits

At the end of this course you should:

- Gain a basic understanding of LiDAR and LiDAR data
- Know all the potential applications of LiDAR
- Understand how to use LiDAR data
- Know how to analyze the quality of LiDAR data
- Understand how to create a TOR for LiDAR survey which will meet a project's requirements

SPEAKER'S BIODATA

Ms. Trudy R. Ganendra graduated from the University of Cambridge in 1997 with a Masters of Engineering degree, and in 1999, obtained a Master's of Science in Environmental Engineering from Imperial College London. In 2001, she was appointed as the Director of Ground Data Solutions R&D Sdn. Bhd. (GDS), a Malaysian-owned LiDAR survey and mapping service provider. GDS has been providing accurate, cost-efficient mapping and mapping products to a broad range of clients since 1991, including developers, planners, and designers throughout Southeast Asia. GDS is the only local service provider of airborne LiDAR and digital imagery surveys in Malaysia: it owns its own LiDAR systems, is involved in research and development of said technology, and is a direct operator with a proven track record of more than 20 years in the industry in Malaysia and Southeast Asia. She is responsible for the day-to-day activities of GDS in both business and operational capacities. Her business responsibilities encompass corporate policies, financial analysis and strategic relations. The operational aspects involve bidding, planning and execution as well as reporting and client liaison. To date, she has successfully executed 71 LiDAR projects.

Dr. GS Ebrahim Taherzadeh Mobarakeh was born in Isfahan, Iran in 1982. He received his Bachelor of Natural Resource Engineering from Maybod University in 2004, Masters of Remote Sensing & GIS from Universiti Putra Malaysia in 2009 and Ph.D in Spatial Information Engineering from University Putra Malaysia in 2014. His thesis was on the development of generic models to extract roof materials using high spatial resolution satellite imagery. Currently, he is working as a Remote Sensing Specialist at Ground Data Solutions R&D Sdn. Bhd., a Malaysian LiDAR survey and mapping service provider. His major research effort includes urban remote sensing using high resolution imagery, hyperspectral, and LiDAR data, and has published 12 technical papers on these subjects in international conferences and journals.

TENTATIVE PROGRAMME

08:30 - 09:00	Course Registration
09:00 – 10:30	**Session 1: Introduction to LiDAR** • Introduction to Trainers • What is LiDAR? • Types of LiDAR • What is a *waveform laser*? • LiDAR data and point clouds • Basic terminology of LiDAR • The main components of LiDAR • LiDAR survey procedures • Advantages of LiDAR • Characteristics comparison of different survey techniques • LiDAR applications • Examples of LiDAR data before and after processing • LiDAR data quality • Conclusion
15 min	Tea Break
10:45 – 13:00	**Session 2: Introduction to Software using LiDAR data** **Introduction to Microstation, TerraScan, and TerraModeler Software** • Introduction to Microstation • Introduction to Terra applications • TerraScan & TerraModeler • Quality of LiDAR data **Introduction to MOSS/MX** • Introduction to MOSS/MX • Capabilities of MOSS/MX • Using MOSS/MX & LiDAR for Alignment Design of Roads & Railways **Introduction to PLS-CADD & LiDAR** • Basic Overview and Introduction to PLS-CADD • Optimum Spotting Using PLS-CADD & LiDAR Data for New Transmission Route Alignment Design • Introduction to Transmission Line Re-rating Technology Using PLS-CADD & LiDAR for Transmission Line Operation and Maintenance **Introduction in Preparing a LiDAR Request for Proposal** • Specifications details • Experience evaluation • Common problems faced by engineers when using LiDAR data
1 hour	Lunch Break
14:00 – 15:30	**Session 3a: Introduction to LiDAR Software (I) Hands-On Practical** • Introduction to LiDAR Software • LiDAR Software Function Tools • Reading LiDAR point clouds • Reading ortho-imagery • Viewing LiDAR data in different modes • Viewing 3D visualizations • Viewing point cloud profiles **Session 3b: Introduction to LiDAR Software (II) Hands-On Practical** • Procedures to measure quantities using LiDAR data • Procedures to analyze the quality of LiDAR data
15 minute	Tea Break
15:45 – 17:00	**Session 4: Flood Risk Assessment & Mitigation with Hands-On Practical Training** • Introduction to Flood Hazards, Risk Assessments, and Mitigation • Application of LiDAR Technology in Flood Management • Case Study and Lessons Learned • Processing LiDAR Data for Flood Management (including practical session
17:00 - 17:30	Feedback / Questionnaires Q&A

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.