MONASH University MALAYSIA

Workshop on:
Stability and serviceability of slopes and deep excavations
Insight on the influence of man-made activities and the environment

Civil Engineering Discipline, School of Engineering

DESCRIPTION:

Majority of the soil failure incidents are typically witnessed in slopes, underground and/or deep excavations. However, avoiding slopes, either in soil or rock, is practically impossible in infrastructure development projects involving construction activities both on-surface and underground. With more-and-more usage of numerical and/or analytical packages, certainly with good intensions of reducing the analysis time and explore in-depth analysis, it is crucial for engineering students, early-career and practicing engineers to recuperate the basic theoretical understanding. A thorough understanding of the basics is perhaps crucial, particularly in analysing numerous outputs an engineer generates using commercial packages or software. This two day's event provides one such platform to the engineering students and practicing engineers to interact with the well-recognized academics and experienced engineers working in the field of soil and rock slopes as applied to excavation and stabilization, including slopes and deep excavation.

CONTENTS:

Day	Time	Event description (*proposed*)	Speaker/person-in-charge
Monday, 1 July 2019	8:30	**Registration at the front desk**	
	9:00 – 9:15	**Welcome address and inauguration of the workshop**	*Monash University Malaysia*
	9:15 – 9:30	**Introduction of the workshop theme and speakers**	*Dr. M E Raghunandan*
	9:30 – 10:30	**Technical presentation 1:** Application of analytical and numerical methods to assess stability of shallow underground excavations in cohesive-frictional ground	*Professor Carlos Carranza-Torres*
	10:30 – 11:00	Tea break	
	11:00 – 12:00	**Technical presentation 2:** Use of geosynthetics in residual soil backfills for the construction of reinforced soil structures	*Ir. Albert Lim*
	12:00 – 13:00	**Technical presentation 3:** Slope stability and erosion processes: A case study looking at reservoirs across Malaysia	*Ms. Katherine Brown*
	13:00 – 14:00	Lunch	
	14:00 – 15:00	**Technical presentation 4:** Challenges in design and construction of deep excavation	*Ir. Dr. Tan Yean Chin*
	15:00 – 16:00	**Technical presentation 5:** Impact of climate change on the energy and water aspects of the infrastructure	*Assoc. Prof. Pat Yeh Jen-Feng*
	16:00 – 16:30	Tea break	
	16:30 – 17:30	Open discussion with the panel of experts	
Tuesday, 2 July 2019	9:00 – 10:30	**Short course:** Numerical modelling of shallow excavation problems	*Professor Carlos Carranza-Torres*
	10:30 – 11:00	Tea break	
	11:00 – 12:30	**Short course to continue**	*Professor Carlos Carranza-Torres*
	12:30 – 14:00	Lunch	
	14:00 – 16:00	**Short course to continue**	*Professor Carlos Carranza-Torres*
	16:00 – 16:30	Tea break	
	16:30 – 17:30	**Expert led discussion and interaction session**	

Note: the venue and detailed program will be communicated to the registered participants in a separate email.

REGISTRATION DETAILS:

The registration fee for this course is as below. The short course (day 2) is a hands-on course proposed to be conducted in one of the computer laboratories at Monash University. Thereby the course is structured to host only a specific number of participants. Confirmation of registration therefore will follow the first-come first-serve basis. It is strongly advised to register first before making your payment. Nonetheless, the organizing team should receive your proof of payment within the next 3 working days in order to confirm your registration via the link below.

CLICK HERE for the Registration to this workshop.

Confirmation of payment should be send to Ms. Mohanapriya Iyadorai via email at *mohanapriya.iyadorai@monash.edu*

FEE STRUCTURE:

Category	Early bird registration (on/before Monday 20 June 2019)		Late registration (after Monday 20 June 2019)	
	Day 1	**Day 2**	**Day 1**	**Day 2**
Student – Monash University	RM 50	RM 50	RM 100	RM 150
Student – Other Universities	RM 100	RM 150	RM 150	RM 200
Alumni – Monash University	RM 100	RM 150	RM 150	RM 200
Practicing Engineers; Academics; Other Professionals	RM 200	RM 300	RM 250	RM 350

PAYMENT DETAILS:

Payee name: **Monash University Malaysia Sdn Bhd**
Bank name: **Public Bank Berhad, No.48 & 50 Jalan PJS 11/28A, 46150 Sunway City, Selangor, Malaysia**
Account No: **307 412 960 5**
Swift Code: **PBBEMYKL**

Requests for more information or queries regarding the workshop may be directed via an email to the following

Dr. M E Raghunandan - *mavinakere.raghunandan@monash.edu*
Ms. Mohanapriya Iyadorai - *mohanapriya.iyadorai@monash.edu*

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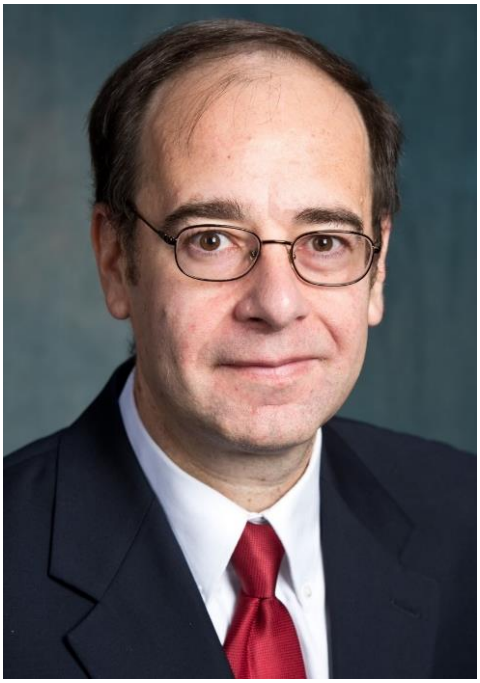
ice
Institution of Civil Engineers

TECHNICAL SPEAKERS:

Professor Carlos Carranza-Torres PhD, PE (USA)

Department of Civil Engineering, University of Minnesota, Duluth Campus, USA



Dr. Carranza-Torres has over 20 years of experience working in the industry of geotechnical engineering (full time since 1998 and as part-time consultant since 2008) and 10 years of experience working in academia (starting 2008 as Associate Professor and since 2017 as full-time tenured Professor at UMD). At the university he teaches or have taught undergraduate and graduate courses in rock mechanics, soil mechanics, geotechnical design, engineering geology, numerical analysis, design of excavations and others. His field of research is in the development of analytical and numerical techniques for the practical treatment of geo-mechanics problems. In the geotechnical engineering industry, he has worked first as project engineer and later on, as independent consultant for various geotechnical engineering groups involved in excavation projects for civil and mining engineering applications, in the US and overseas. Dr. Carranza-Torres has served in the editorial board of various geotechnical engineering journals, including Engineering Geology, Tunnelling and Underground Space Technology, International Journal of Rock Mechanics and Mining Sciences and others.

Ir. Tan Yean Chin PhD, PE

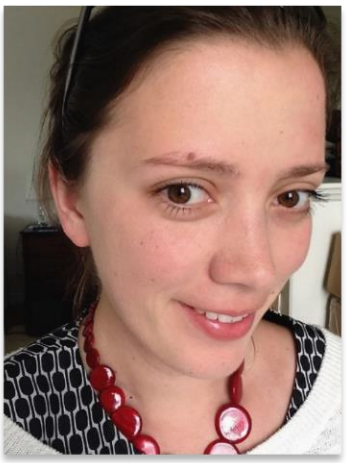
Founder & Senior Director, G&P Professionals Sdn. Bhd., Kuala Lumpur, Malaysia

Ir. Dr. Tan is one of the Founder and Senior Director of G&P Professionals group of multi disciplines engineering consulting firms. He has lead his team in geotechnical design of mega projects such as Electrified Double Track Railway project (200 km) from around Taiping to Alor Setar, Klang Valley MRT Line 1 (SBK Line) and Klang Valley MRT Line 2 (SSP Line). Ir. Dr. Tan has published more than 100 technical papers in local/international conferences and seminars. Ir. Dr. Tan is a Professional Engineer and an Accredited Checker (Geotechnical) registered with Board of Engineers Malaysia (BEM), a government regulatory body registering and governing all engineering personnel in Malaysia. He is also a registered ASEAN Chartered Professional Engineer (ACPE) as well as in the APEC and International Professional Engineers registers. Ir. Dr. Tan Yean Chin is the Immediate Past President of The Institution of Engineers Malaysia (IEM) after finishing his full term of 2 years as President from 2016 to 2018. He served 10 years as Board member of BEM. Ir. Dr. Tan also holds the position of Secretary General (2008-2019) of the Federation of Engineering Institutions of Asia and the Pacific (FEIAP), an independent umbrella organization for the engineering institutions in the Asia and the Pacific region. Ir. Dr. Tan is also an Honorary Fellow of the ASEAN Federation of Engineering Organisations (AFEO), Fellow of IEM, Institution of Civil Engineers (ICE, UK), ASEAN Academy of Engineering & Technology (AAET) and Academy of Engineering and Technology of the Developing World (AETDEW).

TECHNICAL SPEAKERS:

Katherine Brown ME

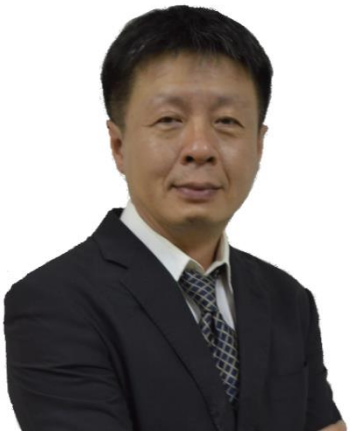
Head of Water Resources, DHI Malaysia



Katherine Brown is the head of the Water Resources Department at DHI Malaysia with extensive international experience in the modelling and management of surface water and related infrastructure, particularly hydropower. Katherine has a Bachelor of Environmental Engineering from Monash University and a Master of Water Resource Management from the University of South Australia. To date, her work has taken her across Australia, New Zealand, the United States, Canada, and most recently South-East Asia. This work has focused on the development and calibration of hydrologic and hydraulic models for a broad range of clients including the hydropower industry, large and small-scale irrigators, and city and regional councils.

Associate Professor Pat Yeh Jen-Feng PhD

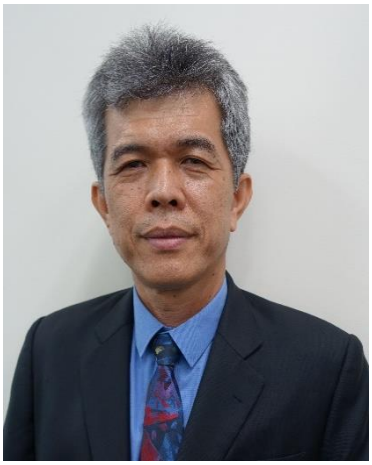
School of Engineering, Monash University Malaysia, Sunway City, Malaysia



Dr. Pat Yeh is currently an Associate Professor at the Monash University Malaysia. He obtained his PhD degree from Massachusetts Institute of Technology (MIT) in 2003 in the field of Hydrology, and since then had worked in various world-renown universities such as University of Hong Kong, University of California (Irvine), University of Tokyo, and National University of Singapore. His research fields are hydrology, hydrometeorology, water resources, and climate change. The fundamental goal of his research is to seek for holistic understanding of the basic hydrologic and atmospheric processes and mechanisms, and their mutual interactions governing the water and energy cycles over a wide spectrum of spatial and temporal scales. He has expertise in hydrologic modelling, hydro-climatic data analysis, and the assessment of climate change impacts on water disasters (flood and drought) and water resources. He has published 50 SCI journal papers with h-index of 27 according to the Web of Science (28 according to Google Scholars).

Ir Albert Lim MSc, PE

Regional Manager, Water & Environment division, Tencate Geosynthetics Asia Sdn Bhd, Malaysia



Albert Lim is the head of the Water & Environment Division at Tencate Geosynthetics Asia Sdn Bhd. He obtained his Master of Science from the University of Mississippi after completing a Research Project in Prediction of Pavement Remaining Life funded by the Mississippi State Highway Authority, USA. He has extensive experience in dealing with extremely soft soil, land reclamation over soft soil, slope failure remediation, wall and slope construction, coastal and waterway design and applications. He is also involved in the implementation of research and development projects with National University of Singapore and Genobe University of France in the study of geosynthetics for pile embankment and reinforced soil structure applications. Albert traveled extensively in Asia Pacific Region and conducted many short courses, lectures on geosynthetics to government agencies, engineering institutions, consultants and contractors. He also published more than 30 technical papers in both local and international conferences.

ORGANIZING CHAIR:

Dr. Mavinakere Eshwaraiah Raghunandan PhD, CEng (UK)

School of Engineering, Monash University Malaysia, Sunway City, Malaysia

Dr. Raghunandan is a Senior Lecturer in Geomechanics at Monash University Malaysia (MUM). Prior joining MUM he has experiences working at University of Regina, SK Canada as a post-doctoral fellow (2011-12) and the University of Saskatchewan, SK Canada as an exchange student under the Canadian Commonwealth Scholarship in 2011. Dr. Raghunandan has a PhD degree from the Indian Institute of Technology Bombay, India (2007-11). His teaching at MUM involves undergraduate course related to mechanics and geomechanics. His research interests mainly focus in soil dynamics and geotechnical earthquake engineering, behavior of soil under pavements and machine foundation, ground improvement, environmental geotechnology, and green materials in soil. He has published 21 ISI-indexed journal papers and secured reputed and competitive research grants till date. Dr. Raghunandan is registered as a Chartered Engineer (CEng) by the Engineering Council UK.

SESSION CHAIR:

Professor Khu Soon-Thiam PhD

School of Engineering, Monash University Malaysia, Sunway City, Malaysia
Deputy Director, Advanced Engineering Platform, Monash University Malaysia, Sunway City, Malaysia

Professor Khu is a Civil Engineer by training and after practicing for a few years, deciding to move to the academia and have remain there since 1999. His research interests spans across a number of Civil Engineering related (such as urban water supply treatment and distribution, drainage and sewer network design and operations, fluvial and pluvial flood management, sustainable urban drainage system design and management, etc.) and AI related (optimization algorithms development, neural networks, SVM and clustering, etc.) areas. His research have attracted funding from UK, China, EU funding agencies such as NERC, EPSRC, RCUK, CNRC, FP and Horizon2020. A number of my research work have also attracted attention from the water industrial and they have supported my work generously. He is currently heading the Civil Engineering team in Monash University, Malaysia campus. We have built a very ambitious, energetic and ambitious team of lecturers here, all very eager to contribute and serve our students while developing their own niche research areas.

MONASH University MALAYSIA

Short Course on:
Numerical modelling of shallow excavation problems

Speaker: Professor Carlos Carranza-Torres

2nd July 2019 at the Monash University Malaysia

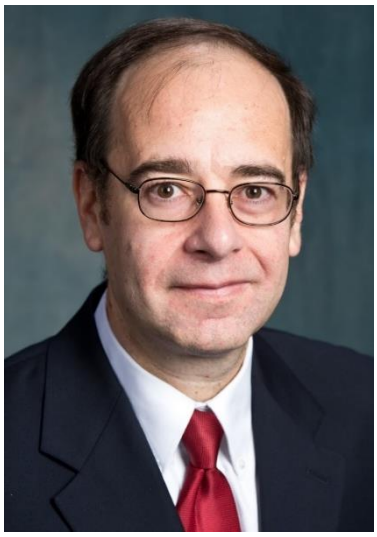
COURSE DESCRIPTION:

This 5-hour short course reviews the application of numerical methods to analyze problems of excavation of tunnels and slopes in soil and rock. Modelling strategies are illustrated with examples of application of finite element and finite difference software to various commonly encountered situations.

COURSE CONTENTS:

1.0 Types of numerical models with examples.
2.0 Material constitutive models.
3.0 Basic steps for modelling mechanical excavation problems.
4.0 Modelling examples of shallow and deep tunnel problems.
5.0 Modelling examples of slope problems.
6.0 Analysis of stability of shallow excavation problems.
7.0 Modelling of liner and reinforcement.
8.0 Modelling the effect of water in the ground.
9.0 Modelling dynamic loading.

COURSE INSTRUCTOR:



Dr. Carlos Carranza-Torres is a Professor in the Department of Civil Engineering at the University of Minnesota, Duluth Campus (UMD). Dr. Carranza-Torres has over 20 years of experience working in the industry of geotechnical engineering (full time since 1998 and as part-time consultant since 2008) and 10 years of experience working in academia (starting 2008 as Associate Professor and since 2017 as full-time tenured Professor at UMD). At the university he teaches or have taught undergraduate and graduate courses in rock mechanics, soil mechanics, geotechnical design, engineering geology, numerical analysis, design of excavations and others. His field of research is in the development of analytical and numerical techniques for the practical treatment of geo-mechanics problems. In the geotechnical engineering industry, he has worked first as project engineer and later on, as independent consultant for various geotechnical engineering groups involved in excavation projects for civil and mining engineering applications, in the US and overseas. Dr. Carranza-Torres has served in the editorial board of various geotechnical engineering journals, including Engineering Geology, Tunnelling and Underground Space Technology, International Journal of Rock Mechanics & Mining Sciences.

Please contact Dr. Mavinakere Eshwaraiah Raghunandan at mavinakere.raghunandan@monash.edu for registration and other information regarding this course.