UDEC Short Course On
Discontinuum Modelling in Rock Mechanics with UDEC Applications

Organised by Society for Rock Mechanics & Engineering Geology (Singapore)
Supported by Protective Technology Research Centre (PTRC), NTU

(PDU Points: 21)

Key Topics

- To teach the discrete element method (DEM) for modelling discontinuum media, using the commercial code UDEC (Universal Distinct Element Code)
- To teach the use of UDEC in the analysis of underground excavations in fractured rock masses.
- To discuss case histories of application of UDEC to the design of caverns and tunnels in jointed rock, in reference to cavern support and reinforcement, and groundwater flow.

Structure of the course

Day 1:

- Introduction to Distinct Element Method.
- General features of UDEC.
- Input of model parameters in UDEC.
- Basic examples of modelling discontinuum systems in UDEC.

Day 2:

- Programming in UDEC.
- Modelling structural elements in UDEC.
- Examples of modelling supported and unsupported caverns and tunnels in jointed media with UDEC.

Day 3:

- Model groundwater flow in UDEC, with examples.
- Examples of modelling groundwater flow around caverns and tunnels in jointed media with UDEC.
- Case histories of application of UDEC to design of caverns and tunnels in jointed media.

Speaker:

Dr. Carlos Carranza-Torres received his PhD in Rock Mechanics from University of Minnesota, Twin Cities Campus, USA, in 1998; his M.S. in Engineering Geology at ITC-Delft, The Netherlands in 1994; and his B.S. in Civil Engineering from Universidad Nacional del Nordeste, Argentina, in 1992. Since the Fall of 2008, he is an Associate Professor of Geotechnical Engineering at the Department of Civil Engineering, University of Minnesota, Duluth Campus. Prior to joining the University of Minnesota, Dr. Carranza-Torres spent ten years working in the geotechnical engineering industry, first for the company Itasca, in Minnesota (Itasca develops and commercializes UDEC) and thereafter as an independent consultant. For the past three years, Dr. Carranza-Torres has been involved as consultant for various large projects related to design of excavations in rock for civil engineering purposes, among them, 2nd Avenue Subway Project in New York, Admiralty Subway Station in Hong Kong, and tunnels of the Airport Link Project in Brisbane, Australia. He has also been involved in various projects related to excavation design for mining projects, among them, El Teniente Mine and Chuqicamata mines in Chile. Dr. Carranza-Torres has authored numerous articles on rock mechanics topics, related to mechanical characterization of rock masses and stability of underground and surface excavations for civil and mining engineering applications. He currently serves as Chair of the Underground Construction Technical Committee of the American Society of Civil Engineers (ASCE) and as member of the Editorial Board of five leading Rock Mechanics and Tunnelling journals.

Course Details

Day 1 Venue : CEE Seminar Room D (N1-B1c-26)
Day 2 &3 Venue : CEE CADD Lab III, N1, B2b-13

Date   : 30 August- 01 September, 2010

Registration Fee

SRMEG Member   : $1200
Non-SRMEG Member   : $1400
(Registration fee covers workshop handouts, tea breaks and lunches)
Registration Deadline: 15th August 2010

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REGISTRATION FORM

1. Name and Address *(Fields marked with an astek * are required)*

Title* ☐ Prof. ☐ A/ Prof. ☐Dr. ☐Mr. ☐Mrs. ☐Mdm. ☐Ms.

Family Name* :_____

First name* :_____

Organization : _____

Mailing

Address* :_____

Telephone*: :_____   Fax* :_____

E-mail* :_____

Association Membership Number: _____

2. Short Course Registration

SRMEG Member	☐ S$ 1200
Non-Member	☐ S$ 1400

Dietary Requirement: ☐ Vegetarian ☐ Others: _____

3. Methods of Payment – CHOOSE ONE ONLY

☐ Cheques in Singapore Dollars made payable to **Society for Rock Mechanics & Engineering Geology (Singapore)**

Please Mail it to:

1 Liang Seah Street
#02-12 Liang Seah Place
Singapore 189022

☐ Credit Card

Credit Card: ☐ VISA ☐ MASTERCARD ☐ AMEX

Card Holder Name: _____

Card No: _____

Expiry Date: _____/_____