

# Rocscience Workshops

rocscience



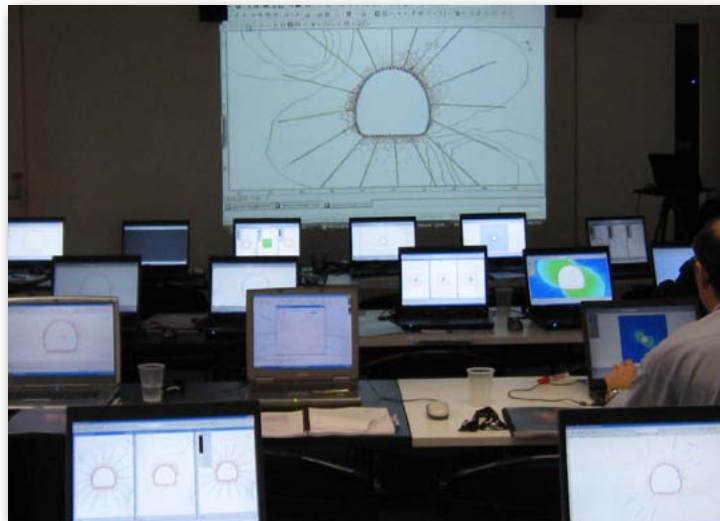
**W**e are coming to Australia in February 2012 to give two different workshops. Complete the Registration Form on the last page to reserve your spot in one or both workshops, which will take place in both Brisbane and Perth.

Professional development, continuing education and software training - we are responding to your numerous requests to Rocscience, again traveling to Australia to offer two of our most popular workshops: Slope Stability Analysis Using *Slide* and Numerical Modeling in Geomechanics Using *Phase<sup>2</sup>*.

*Slide* and *Phase<sup>2</sup>* are two of our most popular and sophisticated programs. Get the most out of this software through a balanced mixture of lectures as well as hands-on computer analysis using practical examples collected over the years. Sign up for one or both workshops in the two Australian cities.

“ You have opened an enthusiasm amongst the young engineers like never before. I had a queue of people wanting to talk about numerical work afterwards. ”

- Dr. Graham Howell  
Principal Engineer  
SRK Consulting  
South Africa (Illovo office)



“ It is paramount that users of software make use of any opportunity to interface with the program supplier and writer. Both parties will benefit. ”

- Dr. Tim Hull  
Principal Geotechnical Analyst  
GHD Geotechnics  
Brisbane, Australia

Our lecturer, Dr. John Curran, CEO of Rocscience and Professor Emeritus, University of Toronto, brings to these workshops over 30 years of experience in the civil, mining and geotechnical fields.

Through these workshops, the participants will increase their understanding of the theory and the fundamentals behind the software, allowing each person to more skillfully use these powerful, yet easy-to-use programs as engineering tools on their projects. Reserve your spot now as registration is limited.

These two workshops are intended for the engineer working in small or large consulting firms, government agencies or universities, who already have some experience using software tools in their working environment. Learn how to apply these advanced tools in finite element modeling and slope stability analysis with tunneling, mining, foundations and embankment examples.

Please visit the [Rocscience Workshops](#) web page for further information on the workshops offered by our company.

### Slope Stability Analysis Using *Slide* Workshop (2 Days)

Day 1:  
Principles & Practices of Slope Stability Analysis

- Module I: Introduction to Slope Stability Analysis
- ◆ Overview of different failure modes of soil and rock slopes
  - ◆ Outline various limit-equilibrium methods

- Module II: Slope Stability Analysis
- ◆ Model building using various modeling approaches
  - ◆ Results interpretation and model validation

- Module III: Advanced Features in Slope Analysis
- ◆ Locating minimum factor of safety
  - ◆ Overview surface optimization techniques
  - ◆ Effect of supports and reinforcements on factor of safety

Day 2:  
Advanced Concepts in Slope Analysis

- Module IV: Probabilistic and Sensitivity Analysis
- ◆ Outline of basic statistical concepts and distributions
  - ◆ Overview of Monte Carlo and Latin hypercube simulations

- Module V: Groundwater Analysis
- ◆ Overview of groundwater analysis for slopes
  - ◆ Seepage analysis using finite element method (FEM)
  - ◆ Effect of steady-state and transient seepage on slope stability

- Module VI: Continuum Modeling of Slopes
- ◆ Application of finite element method to slope stability
  - ◆ Solving various slopes using shear strength reduction method

### Numerical Modeling in Geomechanics Using *Phase<sup>2</sup>* Workshop (2 Days)

Day 1:  
Principles & Practices of Finite Element Modeling

- Module I: Introduction to Stress Analysis
- ◆ Outline stress and strain concepts
  - ◆ Introduce strength models for soil and rock masses

- Module II: Introduction to the Finite Element Method (FEM)
- ◆ Basic concepts of FEM
  - ◆ Development of FE models for practical problems

- Module III: Elements of Geotechnical Modeling
- ◆ Construction of model geometry
  - ◆ Material relationships/laws
  - ◆ Mesh generation and boundary conditions

- Module IV: Design of Support Systems for Excavations
- ◆ Overview of bolt elements
  - ◆ Overview of liner and structural elements

Day 2:  
Advanced Concepts in Finite Element Modeling

- Module V: Analysis of Underground Excavations
- ◆ Analysis and design of underground excavations
  - ◆ Staged material softening and load splitting

- Module VI: Groundwater Analysis
- ◆ Groundwater analysis using *Phase<sup>2</sup>*
  - ◆ Boundary conditions and permeability functions
  - ◆ Seepage analysis of staged excavations

- Module VII: Analysis of Slope Stability with the FEM
- ◆ Outline of Shear Strength Reduction (SSR) method
  - ◆ Advantages and disadvantages of SSR
  - ◆ Examples of soil and rock slopes

**\$995.00 USD for each  
2-day workshop**

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Country: \_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

## VENUES

### Workshops in Brisbane

February 13/14, 2012  
February 16/17, 2012

Novotel Brisbane  
200 Creek Street  
6PO Box 1448  
Brisbane 4000  
+61-7-3309-3309  
[www.novotelbrisbane.com](http://www.novotelbrisbane.com)



### Workshops in Perth

February 27/28, 2012  
March 1/2, 2012

Novotel Perth Langley  
221 Adelaide Terrace  
Perth, WA 6000  
Australia  
+61-8-9221-1200  
[www.novotelperthlangley.com.au](http://www.novotelperthlangley.com.au)



## SELECT WORKSHOP

**Slope Stability Analysis Using Slide (2-Days)**  
Brisbane - Novotel Brisbane  
February 13/14, 2012 - \$995.00 \_\_\_\_\_

**Numerical Modeling in Geomechanics Using Phase<sup>2</sup> (2-Days) - Brisbane - Novotel Brisbane**  
February 16/17, 2012 - \$995.00 \_\_\_\_\_

**Slope Stability Analysis Using Slide (2-Days)**  
Perth - Novotel Hotel  
February 27/28, 2012 - \$995.00 \_\_\_\_\_

**Numerical Modeling in Geomechanics Using Phase<sup>2</sup> (2-Days) - Perth - Novotel Hotel**  
March 1/2, 2012 - \$995.00 \_\_\_\_\_

**Total US\$ for all workshops selected** \_\_\_\_\_

## PAYMENT INFORMATION

- VISA     MasterCard     AMEX  
 Bank Wire Transfer (additional \$25 fee)

Card No.: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Signature: \_\_\_\_\_

## GENERAL INFORMATION

Each workshop includes morning/afternoon refreshments and lunch. Participants must bring their own laptop computer. Once we receive your completed registration form, the software to be used in the workshop will be sent to you electronically so that it can be installed before the workshop begins. It will continue to run on your laptop for one month after the workshop ends.

Participants will be responsible for making their own hotel reservations. Organizers reserve the right to make any necessary adjustments to the program.

Send this completed form by:

Fax: +416-698-0908 or by Email: [software@rocscience.com](mailto:software@rocscience.com)