rocscience

COURSE OUTLINE
Manila, Philippines | March 9–10, 2020

2-Dimensional and 3-Dimensional Slope Stability Analysis

Brief

This two-day course on 2D and 3D Slope Stability Analysis will provide a background on limit equilibrium and numerical modeling for slope stability analysis using various Rocscience software tools. Enhance your expertise through a balanced mixture of lectures and hands-on computer demonstrations using practical examples collected over the years

Tools Used

Slide2
2D Limit Equilibrium Analysis

Slide3
3D Limit Equilibrium Analysis

RS2
2D Geotechnical Finite Element Analysis

RS3
3D Geotechnical Finite Element Analysis

Location

Manila Marriott Hotel
2 Resorts Drive, Pasay City
Manila, 1309 Philippines

Fees

Registration Fee: $700 USD

Early Bird Fee: $650 USD
(ends January 31, 2020)

Rocscience Maintenance+ subscribers receive a 10% discount on registration fees.

Register: courses@rocscience.com

Note

All attendees will be provided with temporary, one month Rocscience software licenses for the programs listed above. Attendees must bring a laptop with the licenses installed.

Module I: Overview of Limit-Equilibrium Methods for Slope Stability Analysis

- Failure modes of soil and rock slopes
- Limit-equilibrium methods

Module II: Geotechnical Investigation and Subsurface Characterization for Slope Stability Evaluation

Module III: Slope Stability Analysis

- Model building (Tips and Pitfalls)
- Material behavior models (anisotropic vs. isotropic)
- Interpretation of results

Module IV: Selection of Analysis Methods

- Selection of method for locating minimum factor of safety
- Circular vs non-circular failure surface analysis
- Failure surface optimization techniques

Module V: Probabilistic and Sensitivity Analysis

- Overview of basic statistical concepts and distribution
- Probability of failure
- Monte Carlo and Latin hypercube simulations
- Sensitivity analysis

Module VI: Groundwater Analysis

- Overview of groundwater analysis
- Seepage analysis using the Finite Element Method (FEM)
- Permeability functions

Module VII: Slope Stability Analysis using Shear Strength Reduction Method

- Application of FEM to slope stability analysis
- Shear Strength Reduction approach
- Jointed rock slope failure
- Deep seated slope failure
- Blocky rock mass slopes

Module VII: Slope Stability Modelling with Slide 3

- Extrude Slide2 model
- Construct 3D model from geological surfaces
- Interpretation of results
- Overlay radar monitoring deformation data

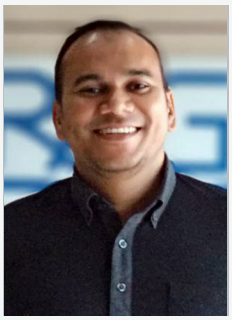
Course Instructors

Thamer Yacoub, Ph.D., P.Eng.
President, Rocscience

Dr. Thamer Yacoub, P.Eng. is the President of Rocscience. He has over 25 years of experience in geomechanics numerical modelling, covering topics including slope stability analysis, settlement and foundation analysis, and surface and underground stress analysis. Dr. Yacoub obtained his Ph.D. degree in numerical geomechanics from the University of Toronto, Canada in 1999. In the same year, he joined Rocscience Inc. as a geomechanics specialist where he was involved in developing Examine, RS2, and Slide2. Dr. Yacoub has developed and taught several Rocscience workshops, seminars, and graduate level courses around the world.

Alison McQuillan, Ph.D.
Director, Rocscience Australia

Alison is the Director of Rocscience Australia based in Gold Coast, Australia, providing software training and tech support for Rocscience in the Asia-Pacific region. She is a Chartered Professional (Geotech) and Registered Professional Engineer in Queensland. Alison holds a Masters of Mining Engineering (Geomechanics) from the University of New South Wales and recently completed her Ph.D in rock mechanics at the same university. Alison's area of expertise is open cut slope stability, previously working in both ops and corporate roles for Anglo American, New Hope Coal, and Rio Tinto as well as providing consulting advice for copper, gold, and iron ore operations in Australia and overseas. Alison takes a risk-based design approach to all geotechnical analysis to find a practical solution for customers.



Mohd Ashraf, Ph.D.
Rocscience Representative, Malaysia
Assoc. Prof. of Geotechnical Engineering, School of Civil Engineering, USM;

Dr. Mohd Ashraf is an Assoc. Prof. at School of Civil Engineering, USM. He obtained his Bachelor of Civil Engineering from USM in 2004 and pursued his Master in Geological Engineering at Gadjah Mada University under the sponsorship of AUNSEED Net JICA Project. In 2010, he obtained his Ph.D in Geotechnical Engineering in the research area of Underground Energy Storage and Hydrodynamic Containment for hydrocarbon storage cavern from Kyoto University under JICA scholarship. He has conducted researches specializing in various aspects of geotechnical and rock engineering such as, evaluation of rock over stressing in hard rock tunnel, urban tunnelling, slope stability analysis, geohazard and geophysical applications in Civil and Geological Engineering. Recently he has been involved in aerial mapping and photogrammetry analysis using UAV for building maintenance, landslide forensic and landslide disasters evaluation, construction planning and progress monitoring including landfill and quarry assessment. He has been integrating UAV technology and reality modelling into his teaching and research interests since 2015.

Alexis A. Acacio
President, Philippine Society for Soil Mechanics and Geotechnical Engineering;
Professor of Civil Engineering, University of the Philippines

Dr. Alexis A. Acacio is a professor of civil engineering at the University of the Philippines. His research interest involves site specific geotechnical investigation, laboratory testing and geotechnical analysis for various infrastructure projects. He is also involved as a geotechnical consultant to various civil infrastructure projects throughout the Philippines and also serves as the president of the Philippine Society of Soil Mechanics and Geotechnical Engineering (PSSMGE).