Two-Day Short Course on Deterministic and Probabilistic Rock Slope Stability Analyses will be taught by

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May 23-24, 2020
Course will be taught in a room at the Jin Jiang Hotel, Ganzhou, China
Course fee: US$ 450

OBJECTIVES
The objectives of the short course are to show the applications of kinematic (both deterministic and probabilistic) and limit equilibrium analyses for rock mass surface excavations. The course lecture notes that is equivalent to about 175 pages will be distributed at the start of the course. Application of the theory will be illustrated using discontinuity data from a mine site in USA and a hydro power project site in China.

COURSE CONTENT
Part 1: Introduction to Rock Fracture Sets & Rock Block Instability; Discontinuity Shear Strength (3 1/2 hrs. of lectures)
A power point presentation on rock fracture sets and rock block instability; Fracture geometry mapping & basic characterization; Shear strength of rock discontinuities; Variability of discontinuity orientation and shear strength.

Part 2: Stereographic Projection and Rock Slope Kinematic Analysis (5 1/2 hrs. of lectures)
Principles of stereographic projection; Applications of stereographic projection in the mechanics of discontinuous rock; Kinematic analysis for plane sliding, wedge sliding and toppling; Application of kinematic analysis using discontinuity data from a few hydro power project sites in China and a few mine sites in USA to find maximum safe slope angles; Probabilistic kinematic analysis.

Part 3: Limit Equilibrium Analysis for Plane Sliding (3 hrs. of lectures)
Two-dimensional approach including a tension crack, water forces and rock bolt forces; Operations with vectors on the stereo net; Analysis of sliding of a block in 3D on a plane including water forces, rock bolt forces and seismic forces – the friction circle concept.

Part 4: Limit Equilibrium Analysis for Wedge Sliding (3 hrs. of lectures)
Application of the stereographic projection in defining a wedge formed by intersecting discontinuities; General analytical approach for wedge stability analysis; Illustration of effects of water and tension cracks that may exist in the rock mass, slope face inclination, overall wedge height and double benching in mines on factor of safety of wedge stability through limit equilibrium analyses.

Medium of Instruction:
The medium of instruction will be English.

Who Should Attend:
Civil, Mining and Geo-engineers and geologists who are involved in surface and underground excavations analysis, design and construction activities associated with jointed rock masses will benefit from the short course.
Time Schedule (each day):

8:30—10:30 Lectures

10:30—11:00 Tea/Coffee break

11:00—13:00 Lectures

13:00—14:00 Lunch

14:00—15:30 Lectures

15:30—16:00 Tea/Coffee break

16:00—18:00 Lectures

Narrative Biography of Prof. Kulatilake:

Dr. Pinnaduwa H.S.W. Kulatilake is a Distinguished Professor of Rock Mechanics and Rock Engineering and Academic Director of the School of Resources and Environmental Engineering at the Jiangxi University of Science and Technology, China. He is also an Emeritus Professor at the University of Arizona, USA. He is a registered Professional Civil Engineer in California. He received his B.Sc. (in 1976) in Civil Engineering from the University of Sri Lanka, Peradeniya, MS (in 1978) in Soil Engineering from the Asian Institute of Technology, Bangkok, Thailand and Ph.D. (in 1981) in Civil Engineering (with geotechnics emphasis) from the Ohio State University, USA. He has over 38 years of experience in rock mechanics & rock engineering associated with mining, civil and petroleum engineering, geotechnical engineering, and applications of probabilistic and numerical methods to geo-engineering. He has written over 250 papers and is a member of several technical committees. He has delivered over 30 keynote lectures and over 50 other invited lectures throughout the world on topics related to rock fracture network modeling, probabilistic geotechnics, mechanical and hydraulic properties of joints, rock slope stability and mechanical and hydraulic behavior of rock masses. He has been a research paper reviewer for over 25 technical Journals and an editorial board member for Int. Jour. of Rock Mechanics & Mining Sciences, Int. Jour. of Geotechnical and Geological Engineering, Int. Jour. of Advances in Geological and Geophysical Engineering, Coal Science and Technology and Journal of Mining & Science-Turkey. He is an Associate Editor of Arabian Journal of Geosciences. He has taught short courses on stochastic fracture network modeling, rock slope stability analysis, Block theory, and rock joint roughness and aperture in Sweden, Mexico, Austria, USA, Canada, Hong Kong, Poland, Finland, Australia, South Korea, Sri Lanka, Egypt, Iran, Chile, China, Italy and Peru. He has served over 20 years either as the primary or the sole examiner for the geological engineering professional exam conducted by the Arizona State Board of Technical Registration. He was a Visiting Professor at the Royal Institute of Technology and Lulea University of Technology in Sweden as part of his sabbatical leave. Also, he was a Visiting Research Fellow at the Norwegian Geotechnical Institute, for another part of his sabbatical leave. Due to the contributions he made on teaching, research, consulting and service activities, he was elected to the Fellow Rank of the American Society of Civil Engineers at the relatively young age of 45. In 2002, he received Distinguished Alumnus Award from the College of Engineering, Ohio State University and Outstanding Asian American Faculty Award from the University of Arizona in recognition of his achievements and contributions made to the advancement of his profession. In December 2005, Eurasian National University, Kazakhstan conferred him “Honorary Professorship”. In August 2007, he organized and ran a successful International Conference on Soil & Rock Engineering in Sri Lanka. In January 2009, he organized and ran a high quality International Conference on Rock Joints and Jointed Rock Masses in Tucson, Arizona. He was the guest editor for two special issues published in the Jour. of Geotechnical and Geological Engineering. He received “Kwang-Hua Visiting Professorship” for 2009-2010 from the College of Engineering, Tongji University, China. He was a Recipient of “Guest Professorship” from Wuhan University, China for 2010-2013. In 2011-2012 he received an award from the Chinese Academy of Sciences to spend a sabbatical in China as a Senior Visiting Professor. In 2013 and 2016, he received Peter Cundall awards.
Registration for
Short Course on Rock Slope Stability
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www.jxustrmreconference.org