Numerical Analysis in Geomechanics using UDEC and 3DEC

Date: Three-day course, April 20 – 22, 2020
Optional fourth day available, April 23, 2020

Location: Itasca Consulting Group, Minneapolis, Minnesota, USA

Instructors: Dr. Jim Hazzard, David DeGagne

Registration Fee: US$2,800.00 (includes three-day course, lunch provided)
Register by February 28 and save $300!

Additional Options: US$500.00 additional session on a special topic (options below)
OR: US$750.00 additional half-day, one-on-one session

50% Academic Discount is available but does not apply to the fourth day options.

An introduction to UDEC and 3DEC for application to geotechnical analysis, this three-day course provides an overview of the capabilities and features in UDEC and 3DEC and covers software fundamentals with discussions on the theoretical background, basic concepts, and modeling principles for geotechnical analysis, mining, and petroleum engineering.

Topics include model building, application of initial and boundary conditions, constitutive (material) models, solving, monitoring, and visualizing results. Advanced topics such as ground support, groundwater flow, and the built-in scripting language (FISH) also will be introduced.

There is an optional fourth day which offers a choice of the following special topics:
• Discrete Fracture Networks;
• Advanced FISH;
• Rhino and Griddle;
OR
• four hours of one-on-one time with an Itasca consultant (subject to availability).

This is “hands-on” training, and exercises with UDEC or 3DEC are provided throughout the course. For the problem-solving sessions, the class will be split between UDEC and 3DEC users. A laptop computer is required.
# COURSE OUTLINE

<table>
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<tr>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
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<tbody>
<tr>
<td>Set-up and Introduction to <strong>UDEC</strong></td>
<td>Joint Properties</td>
<td>Fluid</td>
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<td>Introduction to <strong>3DEC</strong></td>
<td>Factor of Safety Analysis</td>
<td>Dynamics</td>
<td>Half-day special topics:</td>
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<tr>
<td>Numerical Modeling Fundamentals</td>
<td>Introduction to <strong>FISH</strong> Scripting</td>
<td>Advanced Modeling Tools</td>
<td>• Discrete Fracture Networks</td>
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<tr>
<td>Rock Properties and Initial Conditions</td>
<td>Ground Support</td>
<td>Advanced Modeling Tutorial</td>
<td>• Advanced <strong>FISH</strong></td>
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<td>Boundary Conditions and Modeling Tutorials</td>
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<td>Software Developments</td>
<td>• <strong>Rhino &amp; Griddle</strong></td>
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<td>• One-on-one with consultant</td>
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Lunch is provided each day.

An Itasca Social will be held Monday afternoon at the Minneapolis office—an opportunity to visit the office and meet software developers and consultants.