SURFACE MINE SCHEDULING USING GEOVIA MINESCHED

Who Should Attend
Surface Mine Scheduling is a three-day course designed for the mine planners, mining engineers, geologists, and technical managers who are responsible for activities that require them to generate or oversee monthly and weekly mine production schedules. The course is designed to provide theory through lectures, complemented by a hands-on real-world mine planning project using GEOVIA MineSched.

Cancellation Policy
Notification of cancellation received in writing by TBD will incur a 20% cancellation fee. No refund will be made after this time.

Course Delivery
- Lectures on theoretical concepts
- Documented step by step computer labs instructions
- Incremental exercises and project work
- Presentation of real mining case studies

Mining Optimization Laboratory (MOL)
MOL research focuses on using operations research and advanced analytical methods to arrive optimal or near-optimal solutions to complex mine planning and operational decision-making problems.

http://www.ualberta.ca/MOL/

Participants are Required to Bring a Laptop
Software will be provided for the course

First Name: _______________________________
Last Name: _______________________________
Company Name: ___________________________
Job Title: ________________________________
Address: __________________________________
City: _____________________________________
Prov/ State: __________________________________
Country: ___________________________________
Email: _____________________________________
Phone: ____________________________________
Fax: _______________________________________
Visa □ Master Card □
PO □ By Phone □
Card #: _________________________________
Expiry _______/_______
CVV: _________________________________
(Fee + 5% GST) CDN$:_____________________
Name on Card: ___________________________
Signature: _______________________________
### COURSE DESCRIPTION

**Software: Geovia MineSched**

Surface Mine Scheduling is a three-day course designed for the mine planners, mining engineers, geologists, and technical managers who are responsible for activities that require them to generate or oversee monthly and weekly mine production schedules. The course is designed to provide theory through lectures, complemented by a hands-on real-world mine planning project using GEOMATIC MineSched. The project covers all the required steps from a long-term yearly schedule generated within a designed pit to a monthly production schedule taken into account mining and processing capacities, truck-shovel hours, drilling and blasting, blending, and stockpiles management constraints. Mining constraints can be applied to ensure that practical schedules are generated. Learn how to model and manage stockpiles and processes, block modeled waste dumps followed by automated filling strategies and waste scheduling. Also, reporting and 3D visualization of a spatial database of the materials within the waste-dump, which is critical for both long-term waste dump management and reclamation. The course covers the following topics:

- Medium/short-term planning concepts
- Data preparation
- Parameters: rates, delays, priorities
- Quantity and quality targets
- Defining mining locations
- Defining process streams
- Period polygons: tonnage/grades
- Reporting: Excel, Access, MS Project
- Animations & presentation tools

**Outcomes of the course include:**

- Schedule from block, polygonal and grid models with any number of elements, material types, and qualities.
- Graphically sequence mining blocks while reporting tonnage and grade.
- Control all aspects of the schedule or use target-based scheduling algorithms.
- Incorporate mining directions, bench lags/leads, face geometry, location limits, and other mining constraints to ensure practical schedules.
- Schedule ancillary activities such as drilling, blasting, and back filling.
- Include material movement to stockpiles, processes, and spatially modeled waste dumps.
- Blend material from mines, stockpiles, processing plants, and waste dumps, producing schedules with complete reports and graphical results.
- Visualize Mine Schedules with 2D and 3D Graphics.

### Day 1

1) **Data storage and familiarization**
   - a) Setup data management hierarchy
   - b) Data review

2) **Data editing and management**
   - a) Block model reporting
   - b) Determine the tonnes and grades within each rock type
   - c) Polygons for graphical results

3) **Block model material classes**
   - a) Assign material classes for the schedule in the block model

4) **Scenario management**
   - a) Creating and opening scenarios

5) **Navigating the scenarios**
   - a) Data grids & Charts
   - b) Dashboard & Spreadsheet views

6) **Scenario parameters – geological model data**
   - a) Defining geological models
   - b) Add the model for scheduling
   - c) Assign material classes for the schedule
   - d) Validate model & check the model for errors

7) **Scenario parameters – location definition**
   - a) Setup Schedule step
   - b) Define mining locations
   - c) Define the two or more mining locations for scheduling
   - d) Evaluate the defined mining locations

### Day 2

1) **Mining constraints**
   - a) Mining rates
   - b) Resource availability
   - c) Physical constraints

2) **Create schedule**
   - a) Define a timeline for the schedule
   - b) Create the schedule
   - c) Add reports and charts to the dashboard

### Day 3

1) **Make the schedule more practical**
   - a) Mining direction
   - b) Investigate the different mining directions
   - c) Investigate vertical-lag, horizontal-lag, maximum-lag, Swell factor.
   - e) Max benches, drop, number of active benches per period
   - f) Production rate modifiers

2) **Haulage and Tonne Km calculations**
   - a) Adding Haulage to the schedule
   - b) Create haulage route strings
   - c) Reporting TKM

3) **Short-term polygons**
   - a) Creating short-term polygons from the long-term schedule
   - b) Bench plans
   - c) End of period surfaces
   - d) Polygon mining vs. Bench Polygon mining
   - e) Polygon constraints
   - f) Polygon mining to a seam boundary
   - g) Polygon mining a single bench
   - h) Different polygons on separate benches

4) **Polygon sequencing**
   - a) Adding a polygon sequence
   - b) Graphically sequencing polygons

5) **Auxiliary activities**
   - a) Drilling and blasting activity
   - b) Graphically animating the activities
   - c) Production activities (optional)