

REGISTRATION DEADLINE September 4, 2024

Send registrations to: professionaldevelopment@cim.org

Online information: <https://www.cim.org/professional-development/mcgill-professional-development-seminars/>

For more information please contact:

Caroline Bilhete

Canada Research Chair and Laboratory Administrator COSMO - Stochastic Mine Planning Laboratory Department of Mining and Materials Engineering, McGill University
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CIM, SME, AusIMM, and SAIMM Members

\$2,500 CAD (excluding taxes)

Non-members \$2,900 CAD (excluding taxes)

Title: _____ Name: _____

SME, CIM, AusIMM or SAIMM Member #: _____

Job Title: _____

Employer: _____

Postal Address: _____

City: _____

Prov/State: _____ Postal/Zip Code: _____

Country: _____

Phone: _____

Fax: _____

Email: _____

I will bring a laptop: Yes No

Payment:

Visa MasterCard Cheque Wire Transfer

Card Number: _____

Expiry Date: MM/YY Amount: \$ _____

CCV Code (3 digit code on back of card): _____

Name on Card: _____

Signature: _____

Registration includes course notes, lunch, and morning and afternoon tea.

Participation in this course may be a valid activity towards continuing professional development with up to 26 contact hours. Participants receive a Certificate of Completion.

Notification of Cancellation received in writing up to September 4, 2024 (minimum of 10 working days before the course) will incur a 20% cancellation fee. No refund will be made after this time. An alternative participant may be nominated. If cancellation done by the organizer, travel expenses including penalties for booking cancellations will not be reimbursed to registered participants. Please ensure that all travel arrangements done can be cancelled as we will not be responsible.

INSTRUCTOR

Kristopher J. Shelswell is a Senior Consultant with SRK Consulting (Canada) Inc. He specializes in designing customized simulation models to replicate the proposed operating practices of real systems by using virtual representations of the activities involved. His models have been applied to both surface and underground ventures to predict the effects of mining methods and practices on operational productivity. He employs the discrete event simulation approach to account for complex multi-variable interactions while assessing the interplay of dynamic processes on the efficiency of the overall mining system. Each mine presents unique challenges, and Kristopher uses his expertise to provide a tailor-made digital study that can be applied to existing sites or future projects to identify strategies to improve performance and implement new and emerging technologies.

VENUE DETAILS

McGill University
Department of Mining and Materials Engineering
3450 University Street
Frank Dawson Adams Building, Room 105
Montreal, Quebec, Canada
H3A 0E8
admrcr.mining@mcgill.ca

LOGISTICS

Lectures are given from 9 AM (refreshments at 8:30 AM) to 5 PM with two 15 minute coffee breaks and a one hour lunch break.

NOTE: Participants will require a laptop for hands-on sessions processing data, running simulations, and analyzing results. Microsoft Excel will be needed to manage model inputs and outputs. A trial version of the simulation software will be provided along with example models. No previous experience with simulation is required.



cosmo.mcgill.ca

COSMO - Stochastic Mine Planning Laboratory, a global center for leading-edge research and graduate education in "orebody modelling and strategic mine planning with uncertainty", is supported by AngloGold Ashanti, Anglo American, Agnico Eagle, BHP, De Beers, IAMGOLD, Kinross Gold, Newmont, Vale, the Canada Research Chairs Program, NSERC, and CFI.

PROFESSIONAL DEVELOPMENT SERIES 2024



STRATEGIC RISK QUANTIFICATION AND MANAGEMENT
FOR ORE RESERVES AND MINE PLANNING

DISCRETE EVENT SIMULATION TO SUPPORT REAL-WORLD MINING ACTIVITIES WITH VIRTUAL TECHNOLOGIES

Kristopher J. Shelswell
SRK Consulting, Canada

September 18-20, 2024
Montreal, Canada





CONTENT AND OBJECTIVES

The mining industry is embracing the digital frontier as mineral extraction becomes increasingly challenging. Simulation models are one of the tools that have gained traction in the planning process for both existing mines and future operations. Discover how simulation models can be used to streamline mine performance by identifying potential risks and opportunities.

Find out how simulation tools can add value to mining operations by:

- Learning about various methods and tools for modelling and simulation studies, and the strengths and limitations of each approach to creating simulation models
- Processing data to identify key parameters, create benchmarking, and derive meaningful values that drive the modelling process
- Understanding key interactions between components of a system that present potential challenges to achieving present and future target production rates
- Participating in group-based work sessions using workshop examples to define and develop the scope of a simulation study
- Implementing the modelling approach with hands-on computer sessions that show how to apply simulation to improve mine planning and mitigate risks
- Carry out simulation analysis to define operating parameters and quantify the effects of trade-off options
- Evaluating simulation results to define the process activities and predict future performance
- Identifying operational bottlenecks in the mining process and working to develop solutions to alleviate the constraints
- Presenting key findings derived from simulation analysis results to identify and characterize opportunities for success

COURSE OUTLINE

Introduction to Modelling and Simulation

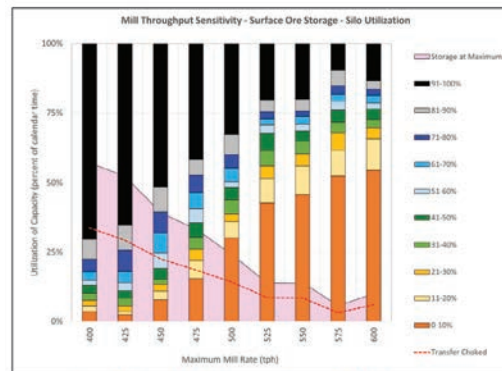
- Digitization and its benefits in mine planning and operations.
- Introduction to modelling and simulation: what are they and how do they differ
- Modelling approaches and their applications
- Choosing the modelling approach suited for your needs
- Discrete event simulation modelling – how it works

Setting Study Parameters to Define Effective Simulations

- Breaking down study goals to address key questions
- Identifying connections within the complexities of mining systems
- Establishing study limits to provide focused simulation assessments
- What to include in the modelling process – determining the correct level of detail and complexity
- Dealing with data: collection, processing, and input generation

Discrete Event Simulation and Analysis in Effect

- Introduction to simulation software
- Overview of model inputs and data manipulation to create simulation scenarios
- Getting started with simulation – how to set up runs and use sample models
- Methods for increasing confidence in the predictive capacity of simulations
- Reviewing model KPIs and simulation results to make sense of the outputs
- Comparisons of simulation examples with conventional approaches
- Identifying potential opportunities and risks associated with simulation analysis



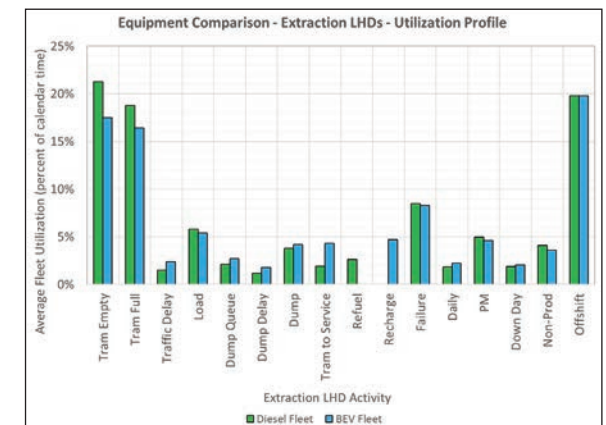
identifying critical connections within the system

COMPUTER WORKSHOPS

- Data analysis and input design – defining the key parameters
 - Participants will use datasets to derive key inputs for simulation work
- Practical simulation of sample mining operations – characterizing the system
 - Example models will be supplied to allow participants to carry out simulation analysis on a test project
- Evaluation of simulation outputs to support the decision-making process – identifying the interconnections
 - Groups will participate in the post-simulation aspect of the modelling process to interpret the output results

WHO SHOULD ATTEND

This course is intended to introduce professionals in the mining sector to the applications of simulation and how it can be leveraged to provide quantitative comparisons to support the decision-making process.



ONLINE INFORMATION

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