REGISTRATION DEADLINE September 3, 2021

To register or for more information please contact:
Deborah Frankland, Canada Research Chair and Laboratory Administrator, COSMO - Stochastic Mine Planning Laboratory, Department of Mining and Materials Engineering, McGill University
3450 University Street, Montreal, Quebec H3A 0E8, Canada
Tel.: 514-398-5461; Fax: 514-398-7099
E-mail: admrc.mining@mcgill.ca

CIM, SME, AusIMM, and SAIMM Members: $2,550 USD (Excluding taxes)
Non-members: $2,750 USD (Excluding taxes)

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CONTENT AND OBJECTIVES

This course is designed according to the latest regulations on public reporting of Mineral Resources. It aims at showing how state-of-the-art statistical and geostatistical techniques help answering the requirements of those regulations in an objective and reproducible manner. A particular emphasis is put on understanding sampling and estimation errors and how to assign levels of estimation confidence through the application of resource classification fundamentals. In addition to a solid introduction to mining geostatistics this course provides a comprehensive overview of industry's best practices in the broader field of Mineral Resource estimation.

Attendees will learn:

- How to use statistical inference to identify problems with the data
- How to produce models that address the needs of mining companies
- Compliance with the standards of NI43-101, SEC Mining Disclosure Rules and JORC
- Effective workflows from data preparation to resource classification
- How to validate, reconcile and communicate resource estimation results
- The fundamentals of resource classification and how to apply them in practice
- How to produce auditable and reproducible resource estimates
- Estimation of grade control models and best practices in ore selection
- Spatial estimation of geometallurgical data
- How to use conditional simulations to quantify uncertainty in resource estimates
- How to integrate orebody simulations into mine planning

2018 Springer publication entitled: “Advances in Applied Strategic Mine Planning” (Editor Roussos Dimitrakopoulos) is included with the course materials.

COURSE OUTLINE

Public Reporting of Mineral Resources and Mineral Reserves
- Resource estimation and the mining business cycle
- Meeting the definition of mineral resources and mineral reserves
- International standards for public reporting

Data Concepts
- Geological data acquisition and data verification
- Quality Assurance and Quality Control
- Detection limit, contamination, precision and accuracy

Geological Modeling
- Geological setting and modeling criteria
- Geological interpretation and 3D modeling
- Common traps and pitfalls

Exploratory Data Analysis
- Statistical inference and spatial declustering
- Identifying geological controls over grades
- Characterizing geological boundaries
- Dealing with outliers
- Selection of compositing methodology and composite size

Variography
- Spatial relationships and the variogram
- Inference of spatial continuity
- Variogram parameters and geology
- Practical modeling of variograms

Estimation
- Change of support concepts
- Spatial estimation and estimation errors
- Kriging explained
- Ordinary Kriging, Indicator Kriging, Uniform Conditioning
- Calibration of estimation parameters
- Block model validation
- Grade control models

Resource classification
- Definitions and methodologies
- Classification criteria: best practices and applications of technical and economic constraints

Introduction to Conditional Simulation
- Assessment of geological uncertainty
- Methods and applications
- Translating geological uncertainty into production risks
- Geological risk in mineral value chain optimization

Special topics
- Spatial estimation of geometallurgical attributes
- Reconciliation - Delivering on promises

WHO SHOULD ATTEND

Exploration and mine geologists, resource analysts, mining engineers, and anyone acting in the role of “qualified” or “competent person”.

https://www.cim.org/professional-development/