

Course contents

- General (day 1)
 - intent and objectives
 - uses of geometallurgy, how it can be profitable
 - summary of concepts of Geostatistics: variograms, interpolation
 - how to calculate the size of a program for the three stages of a project: initial study, prefeasibility, and feasibility or operation.
 - costs of a geometallurgy program
 - benefits of a geometallurgy program
 - reducing project risks by a geometallurgical program
 - published geometallurgical programs at other mines
- Geostatistics (day 1)
 - intent and objectives
 - summary of the process model parameters
 - parameters that are not suitable for interpolation ($A \times b$, residence time)
 - error in process parameters
 - opportunities to change mineral reserves and pit designs
 - tutorial
- Grinding (day 2)
 - intent and objectives
 - modelling of grinding by “power models”
 - using power models for prediction of throughput
 - calibrating models for an operating plant (grinding power and specific energy)
 - how to plan the selection of samples (variability and composites)
 - how to identify the UGMs for grinding
 - model parameters and suitability for interpolation
 - tutorial
- Leaching and flotation (day 3)
 - intent and objectives
 - modelling of separation processes by “kinetic models”
 - using kinetic models for the prediction of recovery
 - calibration of models for an operation plant (recovery)
 - how to plan the selection of samples (variability and composites)
 - how to identify the UGMs for separation processes
 - model parameters and suitability for interpolation
 - process mineralogy
- Mining (day 3)
 - process cost models for mining based on interpolation
 - process cost models for mining based on process mineralogy
 - combining different types of cost models
 - determining block values using variable recovery and variable process costs
 - pit scheduling using variable processing rates
 - tutorial

Who should attend

- **Metallurgists**
 - who work in operating plants who wish to predict future process plant conditions and avoid “surprises”;
 - who work in project evaluation and conceptual design who want to optimize a mineral project’s cash flow.

- **Geologists**
 - who work in operating mines, advanced exploration or project evaluation who want to interpolate process parameters into geologic block models.

- **Mining engineers**
 - who want to optimize a pit design by including process parameters such as throughput and metal recovery in block profit calculations.

- **Project managers**
 - who want to optimize a mineral project’s economics by taking advantage of variable mine throughput and matching the mining sequences to plant capacity.