INSTRUCTOR

MICHEL L. BILODEAU is associate professor (post retirement) in the Department of Mining and Materials Engineering at McGill University. He has a PhD in mineral economics and a MSc in mineral exploration from McGill University, and a BSc in geological engineering from Ecole Polytechnique, Montreal. He has lectured on engineering economy, mineral economics, and financial analysis in feasibility studies for over 30 years at McGill University. His research focuses on mining economics (e.g. mineral reserve and cost estimation, taxation, risk analysis) and related computer modelling. He has taught seminars in mineral project evaluation techniques at McGill since 1980, and has given similar seminars internationally. He is a member of the OIQ and the CIM.

VENUE DETAILS

McGill University
Department of Mining and Materials Engineering
3450 University Street
Frank Dawson Adams Building, Room 126
Montreal, Quebec, Canada H3A 2A7
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 1 hour lunch break.
Mineral Project Evaluation Techniques and Applications:
*From conventional methods to real options*

**WHAT YOU WILL LEARN**
Over this four-day course you will learn the basics of economic/financial evaluation techniques, and how to implement these techniques to mineral project assessment.

The course first covers economic/financial evaluation techniques. This includes cash flow and the time value of money, discounted cash flow methods, taxation, inflation, and sensitivity and risk analyses. Next, the information requirements for mining project assessment are described. Topics include mine recovery and dilution, mineral processing recovery, and mine revenue and capital and operating cost estimation.

The following section demonstrates how estimates and evaluation techniques are combined for the purpose of deriving criteria to support mineral project investment decisions. The final day of the program explores the application of the theory of real options to the valuation of mining projects.

While no previous background in economic analysis is required, some practical experience in the mineral industry and familiarity with mining terminology is desirable.

**COURSE OUTLINE**

**DAY 1**
- Introduction to mineral project evaluation
- General considerations and cash flow
- The time value of money and the cost of capital
- Investment criteria

**DAY 2**
- Tax considerations
- Inflation considerations
- Sensitivity and risk analyses

**DAY 3**
- Estimation of mineral reserves, revenue and capital/operating costs
- Putting it all together: Evaluation of mine development proposals
- Optimization of mine development and operating specifications

**DAY 4**
- The shortcomings of conventional cash flow models
- Financial Options: Definition and valuation methods
- Real Options: Definition and application to mine valuation
- Applications to mining project issues

**PLEASE NOTE** a laptop computer is not required for course activities.