

A background image showing a gold credit card, a pen, and a line graph on a document, suggesting financial and engineering aspects of mining economics.

MINING ECONOMICS

PROFESSIONAL DEVELOPMENT COURSE

PURPOSE

The aim of this course is to provide a solid foundation in the fundamental principles of mining economics. It focuses on cost efficiencies that can be made in each step of the mining process. It also provides an introduction to systematic mine planning and reinforces the importance of engineering decision-making based on costs. At the completion of this course participants will take away a set of templates and solutions that can be utilised back in the workplace.

WHO SHOULD ATTEND?

This course is recommended for those who play a pivotal role in collecting, analysing and presenting information used to identify the economic implications of mine design, layout and operations. Participants typically include: Operational and Planning Engineers, Business and Strategic Analysts, Financial and Management Accountants, Mine Managers and Superintendents.

PRE-REQUISITE SKILLS

No pre-requisite skills or qualifications are required for this course although an understanding of economics, economic terminology and cash flow concepts would be an advantage. Experience of working in a mining environment would also be an advantage.

DURATION

2 Days

DATES & LOCATIONS

This course is delivered regularly at a variety of international venues. For further information please refer to the Calendar section of this web site.

LEARNING OUTCOMES

At the completion of this course participants will be able to:

- Understand frequently used terminology
- Describe the practices involved in systematic mine planning and explain the importance of engineering decision-making based on costs
- Create cash flow models based on compounding and discounting formulae
- Generate breakeven analyses using Discounted Average Cost
- Describe costs from an economic perspective
- Perform incremental and marginal cost analyses
- Apply economic criteria to real-life decision-making

DELIVERY METHOD

Classroom-style delivery with a heavy emphasis on workshops, practical activities, participant involvement and case studies.



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COURSE CONTENT

DAY 1


Module 1: Integrating Economics into Mining

- The mine planning process
- Application of economic evaluation procedures



Module 2: Time Value of Money

- Value at a constant point in time
- Discounted cash flow analysis
- Discount factors, risk, uncertainty
- Inflation & constant money calculations
-  Workshop: Discounted Cash Flow

Module 3: Breakeven Analysis


- Discounted cash flow ranking criteria
- Discounted Average Cost
-  Workshop: Discounted Average Cost

Module 4: Capital & Operating Costs




- Machine life & capital cost
-  Workshop: Capital cost
- Operating costs
-  Workshop: Capital and operating costs from first principles
- Xeras economic modelling
 - Building up a cash flow

DAY 2


Module 5: Cost Effective Mining Schemes

- Key elements
- The systematic planning process
- Economic data at each phase of the planning cycle
- Costs
 - Costs from an economic perspective
 - Types of costs & marginal costs
-  Workshop: Incremental costing for mining alternatives

Module 6: Development Strategies for Maximum Value

- Undeveloped deposits
- Initial assessments
- Capital values & development strategies
-  Workshop: Consolidated activity
-  Workshop: Simple ranking of a deposit
-  Workshop: Scheduling influences on economic ore

Module 7: Investment Decisions involving Uncertainty, Risk & Return

- Discounted cash flow – comparison of two alternatives
- Payback & sensitivity analysis
-  Workshop: Consolidated activity

Module 8: Consolidated Exercise

-  Workshop: Operating mine case study