



MINING FOR NON MINERS (METALS)

PROFESSIONAL DEVELOPMENT COURSE

PURPOSE

The aim of this course is to provide those from a non-mining background with a comprehensive understanding of the open cut and underground metals mining industry. As a result of attending this course participants will have a greater understanding of the operational practices pivotal to the metals mining industry, be able to interpret essential terminology and feel more comfortable interacting with core metals mining staff.

WHO SHOULD ATTEND?

Those from a non-mining background who wish to achieve a greater understanding of metals mining operations. In particular, those who are looking to achieve effective working relationships with core mining staff or who have peripheral contact with the mining industry.

PRE-REQUISITE SKILLS

No pre-requisite skills are required for this course.

DURATION

1 Day

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:

- Appreciate the importance of the metals mining industry
- Understand frequently used terminology
- Describe the use of open cut and underground metals mining methods
- Understand the principles of mine design and planning
- Understand pit optimisation
- Describe the impact of rehabilitation and environmental considerations
- Understand the use of drilling and blasting
- Describe essential pit services and safety operations
- Describe the impact of Geotechnical considerations
- Explore the costing implications of mining operations

DELIVERY METHOD

Interactive classroom-style delivery with focused workshops.



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COURSE CONTENT

Module 1: The Metals Mining Industry

- The financial and economic significance of the metals mining industry
- Resource locations
- Mining methods
- Key players in the market

Module 2: Geology & Ore Reserves

- Geology
 - What is a mineral? What is a rock?
 - Types of rocks and their formation
- Mineral exploration – how & where?
- An overview of ore reserves
 - Formation and discovery
- Ore reserve modelling & its limitations
- Grades of ore & rock quality
- Mineral resources Vs Ore reserves
- Workshop: Defining a mineral type

Module 3: Open Cut Mining

- An overview of open cut mining
 - Why open cut?
 - Examples of open cut operations
- Mine Planning & its role in the mining process
 - Ore or Waste
- Economics and the cost of mining operations
- Scheduling
- Open cut equipment & uses
- Drilling & Blasting
- Mine services & safety
- Environmental considerations
- Case studies: Open cut mining operations

Module 4: Underground Mining Methods

- An overview of underground mining
 - Why underground?
- Underground mining methods & design
 - Cut & fill
 - Room & pillar
 - Open stoping & caving
 - Backfill, recovery & dilution
- Economics & the cost of underground metals mining operations
- Underground mine development
 - Shafts Vs declines
 - Stope & development blasting
 - Ventilation & dewatering
- Underground equipment
- Mine services & safety
- Environmental considerations
- Case studies: Underground mining operations

Module 5: Ore Handling & Processing

- Mineral processing & its role in the mining process
- Overview of ore handling & processing
 - Crushing & grinding
 - Mine to mill optimisation
 - Differences in ore and its processing
- Equipment
- Separation methods to extract minerals
- Tailings Dams
- Case Study: Acid rock drainage