

EXPLOSIVES ENGINEERING FOR SURFACE AND UNDERGROUND MINES

MINN0140

15th – 19th January 2024



School of Mining Engineering

Course Investment:

R18,076.00 (early bird rate expires 30 Nov 2023)

R19,000.00 (2024 course price)

Introduction

This 5-day certificated course discusses the role of explosives engineering in the mining industry. The focus will be on surface and underground mines which will include surface coal mines. The use of explosives in underground coal mines will not be covered.

Objectives

The objective of this course is to provide the participants with the knowledge of explosives engineering that will enable them to understand the factors involved in the fracturing of rock with explosives. This should enable the participants to design blasts, identify problems with the current blasting operations thereby enabling improvements in blast results while taking into account the mines productivity and profitability.

Structure of the course

The course is divided into 10 units.

- Unit 1 discusses the chemistry of explosives and the physics of detonation of explosives.
- Unit 2 explains the mechanism of rock breaking with explosives
- Unit 3 describes the different generic types of explosives.
- Unit 4 goes into the physical properties of explosives.
- Unit 5 describes the different initiation systems.
- Unit 6 covers the principles of blast designs for surface mines.
- Unit 7 covers the principles of blast designs for tunnelling.
- Unit 8 covers the principles of blast design for stopping of various mining methods.



- Unit 9 discusses the evaluation of blast results and problem solving.
- Unit 10 covers the estimation of fragmentation due to blasting and discusses the effect of fragmentation on productivity.

Method of assessment

This course is a NQF level 6 certificated course and students are required to successfully satisfy the following course assessments in order to obtain a certificate of competence:

- A written examination which will take place 2 weeks after the course (2nd February 2024)
- An assignment to be submitted six weeks after the last day of the course (01st March 2024)

Who should attend this course

The course should be particularly relevant to:

- Mining Engineers
- Explosives Engineers
- Explosives Technicians
- Drill and Blast Superintendents
- Rock Engineers

Registration

To register for this course click here: <https://wits-enterprise.co.za/c/explosives-engineering-for-surface-and-underground-mines-minn0140-sseg023/apply>

Please contact the Course Coordinator, Ms Ana-Lucia Cheon if you have any questions. Her contact details are:

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