



## Programme in Blasting Engineering

Presented by the Department of Mining Engineering, University of Pretoria

5 ECSA CPD Points

The **Programme in Blasting Engineering** covers the basics of commercial explosives and the advanced application in both underground and surface mining environments. You will also be introduced to the impact of fragmentation on the mining cycle, specialised blasting practices and the effect of blasting on the environment in more detail. The course further covers the assessment of drilling and blasting practices, downstream effects of blasting outcomes, safety in blasting and legislation.

### Outline of the programme

This unique course will enable you to be trained in the basic theory of the subject and the application thereof, whilst having the chance to interact with experts in the field. The course provides a comprehensive training experience and is based on the undergraduate and postgraduate Explosives Engineering courses presented in the Mining Engineering degree programmes at the University of Pretoria.

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## Programme content

<b>19 February</b>	Geology and Rock Drilling
<b>12 March</b>	Introduction to Commercial Explosives
<b>16 April</b>	Underground Explosives Application
<b>21 May</b>	Surface Mining Explosives Application
<b>18 June</b>	Fragmentation
<b>16 July</b>	Environmental Blasting
<b>20 August</b>	Blast Performance Assessment
<b>17 September</b>	Explosives Legislation and 3-D VR Centre
<b>15 October</b>	Economics of Blasting/Certificate Ceremony

## Learning outcomes

The detailed outcomes would be reached as presented in the industry syllabus, however on a broader base, the course will be aimed at developing the candidate's abilities in the six cognitive levels; knowledge, comprehension, application, analysis, synthesis and evaluation. Thus, when being examined on the topics detailed in this syllabus, candidates would be able to demonstrate their capacity for:

- Comprehending and understanding the general blasting engineering principles covered in this syllabus and applying these to solve real world blasting problems in the mining and civil environments
- Applying fundamental scientific knowledge, comprehension and understanding to predict the behaviour of blasting in different types of risks in real world mining environments
- Performing creative procedural design and synthesis of blast layouts and support systems to control and influence different blasting design processes
- Understanding the greater picture in the total blasting process and the overall evaluation thereof
- Communicating, explaining and discussing the reasoning, methodology, results and ramifications of all the above aspects in a professional manner at all levels.

## Who should enrol?

This course is ideal for you if you are mining personnel involved in blasting activities, both in the underground and surface mining environments, as well as contractors performing blasting activities on mine sites and civil excavations, personnel from explosives companies, suppliers of explosives products, senior management and consultants to the mining industry.

## Programme fees

**R27 750.00 per delegate (VAT incl.)**

Fees include all course materials, 3-D Virtual Reality session and refreshments.

## Accreditation and certification

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## Registration and enquiries

### Client Information Centre

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## Programme in Blasting Engineering

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### Programme presenter

#### Wolter de Graaf

Department of Mining Engineering

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Wolter de Graaf obtained his B.Eng Mining Engineering degree in 1985 at University of Pretoria. He went on to complete his B.Eng. Honours in Mining Engineering in 1989, at the same university. In 1993, Wolter obtained a Diploma in Blasting Engineering. He also possesses numerous certificates, such as South African Mine Manager's Certificate, Metalliferous Surface and Underground Blasting certificates.

Wolter is registered as a Professional Engineer with the Engineering Council of South Africa (ECSA). After graduation in 1988, he joined Western Areas Gold Mine as a miner and shift boss. From 1990 until 1992 he was employed by Rietspruit Open Cast Services, in Mpumalanga, south of Witbank, as a Planning Officer and Production Foreman.

During 1992, Wolter joined African Explosives Limited (AEL), where he served in various portfolios within the company such as Regional Technical Engineer, Senior Projects Engineer, Area Sales Manager (Central Africa), Project Manager and Regional Contract Manager. After 18 years with AEL, Wolter decided to pursue a career with the Department of Mining Engineering at the University of Pretoria, as Senior Lecturer, a position he still currently holds. Wolter runs a consultancy company, and has facilitated many drilling and blasting courses throughout Southern Africa.

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