

PROFESSIONAL DEVELOPMENT TRAINING COURSES

Professional Development Courses: Johannesburg

1-day **Introduction to Geostatistics**2-days **Successful Sampling and QAQC of Assay Data***2-days **Grade Control and Practical Reconciliation***

*Please note: these 4-days of training are the equivalent of our 4-day Grade Control & Reconciliation course

Training courses in Johannesburg	Course dates in 2010		
Introduction to Geostatistics	3 May	16 Aug	6 Dec
Successful Sampling and QAQC of Assay Data	4-5 May	17-18 Aug	7-8 Dec
Grade Control and Practical Reconciliation	6-7 May	19-20 Aug	9-10 Dec

Course Content: INTRODUCTION TO GEOSTATISTICS

This one-day workshop unravels the mystery of the concepts and applications of geostatistics in mining. Each aspect is examined using presentations, practical exercises and activities. This is an excellent course for managers, miners, engineers and geologists needing a refresher course in geostatistics.

- Overview of where geostatistics fits into mining
- Importance of assumptions, data integrity and geology
- Tools for statistical data analysis
- What is variography?
- Methods of estimation - inverse distance and kriging
- Introduction to conditional simulation

Course Content: SUCCESSFUL SAMPLING and QAQC OF ASSAY DATA**Day 1 - Successful Sampling**

This course provides a hands-on guide to designing and running effective sampling programs. Every aspect is thoroughly explained with case studies and practical exercises. Participants will:

- Learn how to critically assess and design sampling and sample preparation systems
- Understand the importance of good sampling practice and the cost of poor sampling
- Learn correct sampling practice and gain an awareness of sources of potential sampling error
- Understand and apply Gy's sampling theory to sample size selection and the design of sampling protocols

This course is designed for all those involved in and affected by the sampling process.

Day 2 - QAQC of Assay Data

This course tackles the issue of best practice and presents a set of practical guidelines for ensuring highest data quality. Participants will:

- Understand the principles of QAQC
- Learn how to design QAQC programmes and achieve best practice in data quality
- Gain an overview of drilling and assaying technology
- Understand basic statistical theory and the fundamentals of quality management statistics
- Learn techniques for reviewing assaying results
- Learn how to design and develop QAQC systems

This course is designed for resource and exploration geologists, laboratory and metallurgical personnel and anyone associated with project evaluation.

Course Content: GRADE CONTROL and PRACTICAL RECONCILIATION

Day 1 - Grade Control

This course will show you how to control your ore mining in open pit and underground mining.

You will learn:

- best practice grade control techniques
- how to optimise your sampling grid and grade control model
- the ore control process in open pit and underground mines
- techniques for dilution control to maximise profit

Case studies are used to illustrate the development of relevant processes, how to deal with difficult orebodies and the comparison of various techniques.

DAY 2 - Practical Reconciliation

This course reviews and investigates the calculation and interpretation of claimed grade control, resource and reserve numbers, and their relationship with plant figures.

Participants will learn how to:

- interpret, validate and critically assess complex reconciliation spreadsheets
- understand metallurgical balance sheets and extract key data for the reconciliation process
- build reconciliation systems from first principles
- understand the stakeholders in the reconciliation process and their differing requirements
- understand the differing inputs from open pit and underground operations
- reconcile resources, reserves, and grade control figures - when and why
- provide simple and clear information on reconciliation to clients
- appreciate the dangers in using spreadsheets and review some of the alternatives
- recognise key aspects of a best practice reconciliation system and how to achieve them

This course is designed for anyone involved with or about to become involved with the design, implementation, evaluation or monitoring of reconciliation systems.

PLEASE NOTE

Attendance of the Successful Sampling and QAQC of Assay Data training days - or equivalent work experience - is a recommended prerequisite to attending the 2-days of Grade Control and Practical Reconciliation training.

Presenters

The course presenters will be chosen from Snowden's most experienced consultants.

Mark Burnett - Divisional Manager Resources - Johannesburg Office

BSc (Hons) from the University of the Witwatersrand Post Grad Dip. in Terrain Evaluation (University of the North West)



Mark has more than 17 years experience in Witwatersrand mine geology and resource estimation. Mark has particular experience in geological modelling, resource estimation, mine planning, technical reviews, due diligences and grade control. Prior to joining Snowden, Mark was the New Business Manager (Technical) for Harmony Gold Mine Ltd. In this role Mark reviewed potential acquisition targets, both locally and internationally. Since joining Snowden Mark has worked on a number of projects, including exploration projects, gold, uranium, coal and base metals. Mark presents Snowden's professional development courses.

Mark Roux - Senior Resource Geologist

BSc (Hons) Geology, University of Pretoria, MGSSA



Mark has experience in various roles within the diamond industry from grass roots exploration to early stage evaluation of potential kimberlitic bodies; this involved working in a number of African ventures in Botswana, South Africa, Gabon and the Democratic Republic of the Congo fulfilling tasks ranging from raw sampling to project management and due diligence reporting roles. Following his exploration experience Mark moved into a new role as a resource extension geologist at Finsch Mine in the Northern Cape, where his tasks involved planning and executing underground drill projects, QAQC of logged core, interpretative logging and Gemcom modelling of the Block5 extension of the Finsch kimberlite pipe. Mark is currently completing his GDE with focus on Mineral Resource Evaluation. Mark's fields of expertise lie in exploration, diamond geology, data validation, GIS and ore body modelling. Mark also presents Snowden's professional development courses.

Delegate feedback

Snowden prides itself on the standard of its courses and on the quality of its presenters. Feedback from our previous course participants includes the following:

Introduction to Geostatistics

"A well organised and presented course. Lots to take in!"

"The course gave me a good understanding of problems to look out for and put concepts into perspective"

"The most valuable part of the course was being able to understand what kriging is and how it works"

"Being able to work with your own data was the best part of the course"

Successful Sampling

"I liked the activities throughout to reinforce concepts and ideas"

"The sample nomograms were really interesting and applicable"

"The hands-on practical exercise was the most valuable as it put things into perspective" "The best part was finding out there is more to sampling than putting dirt in bags"

QAQC of Assay Data

"The excel spreadsheets were awesome!!"

"It was a reminder that parts of our companies QAQC procedures could be improved"

"A good exposure to the wide variety of QAQC available to be used and what impact it has"

"Gave insight into the operations of the lab from sample preparation and how to audit the labs"

Grade Control

"The most valuable part of the course was realising that every other site has similar issues"

"Being able to step back and observe the entire process was the best part"

"It was a well structured and organised lecture"

"Strong emphasis on first principles and best practice."

"Most valuable lesson on course - Everything!"

Practical Reconciliation

"Excellent presenter - seemed to be able to discuss everyone's mine site - made things interesting"

"Doing practical exercises are always very helpful"

"Developing flow charts of processes enabled a better understanding of the reconciliation process"

"The manual was excellent and some perspective was gained of how reconciliation should be approached"

Fees

Payment required at time of registration.

Introduction to Geostatistics: ZAR4,342.11 (excl VAT) per person

Successful Sampling and QAQC of Assay Data: ZAR8,684.22 (excl VAT) per person

Grade Control and Reconciliation: ZAR8,684.22 (excl VAT) per person

These fees include comprehensive course manuals, refreshments and lunch.

PLEASE NOTE: A 10% discount is offered for booking on 2 or more these courses.

Laptops for practical exercises

PLEASE NOTE: Attendees are please to bring their own laptops to the courses.

Mentoring - Learn while working on your own data or project.

Snowden provides one-on-one technical mentoring to help develop your knowledge, skills and experience.

Our consultants will guide you to use due process *while you work on your own data or project*.

Take advantage of Snowden's 23 year knowledge and skills base to help fast-track your technical knowledge.

On-site customised courses

All our courses can be customised to suit your specific training requirements and presented either on-site or at a venue of your choice. Please contact Diana Titren, Training Manager, on +61 8 9211 8670 or training@snowdengroup.com for further information.

Contact and registration

For more information on Snowden's Training and Mentoring programmes, please contact Diana Titren, Training Division Manager, on +61 8 9213 9670 or training@snowdengroup.com

To register, please complete the following form and either fax it to Shannon Aitken, Training Coordinator, on FAX +61 8 9322 2576 or EMAIL training@snowdengroup.com

Please visit www.snowdengroup.com for more information about our training courses

Snowden Office Contact Details

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VANCOUVER +1 604 683 7645 BELO HORIZONTE +55 (31) 3222-6286 LONDON +44 1932 268701

REGISTRATION FORM

One-day Professional Development Courses - Johannesburg

Snowden Mining Industry Consultants, Technology House, Greenacres Park, Cnr Victory & Rustenburg Rd.
PO Box 2613, Parklands, Johannesburg.

Please either fax or email your registration to: Fax: +61 8 9322 2576 Email: training@snowdengroup.com

	TRAINING COURSES in Johannesburg	DATES			FEE per person	
	Please tick the course/s and the dates you would like to attend	<input type="checkbox"/> Introduction to Geostatistics	<input type="checkbox"/> 3 May	<input type="checkbox"/> 16 Aug	<input type="checkbox"/> 6 Dec	ZAR4,342.11
	<input type="checkbox"/> Successful Sampling & QAQC of Assay Data	<input type="checkbox"/> 4-5 May	<input type="checkbox"/> 17-18 Aug	<input type="checkbox"/> 7-8 Dec	ZAR8,684.22	(excl VAT)
	<input type="checkbox"/> Grade Control & Reconciliation	<input type="checkbox"/> 6-7 May	<input type="checkbox"/> 19-20 Aug	<input type="checkbox"/> 9-10 Dec	ZAR8,684.22	(excl VAT)
Total excluding VAT					ZAR	excl VAT
Total less 10% discount for booking on 2 or more courses excluding VAT					ZAR	excl VAT
FINAL TOTAL including VAT					ZAR	incl VAT

Important: It is compulsory for South African companies to add 14% VAT to the final total

Delegates must please bring their own laptops to the training courses

PLEASE FILL IN ALL THE FOLLOWING BOXES

Delegate Name			
Position (in company)			
Company Name			
Address			
Delegate's Telephone:			Email:
Person responsible for paying account	Name:	Tel:	Email:
Your Company VAT number:			

PAYMENT OPTIONS

Payment required at time of registration - payment confirms your registration.
A tax invoice will be issued on receipt of payment.

Please tick your payment option.

Cheque: Please enclose a cheque made payable to Snowden Mining Industry Consultants.

OR

Electronic transfer: Please quote either your **company name** or **invoice number** on your EFT transaction.
ABSA Bank, 160 Jan Smuts Branch Code: 508005 Type of Account: Current Account
Account No.: 4057661908 VAT No. 405 020 6434

OR

Credit card: Please note: Snowden DOES NOT charge a surcharge for credit card payments.

Visa card Master card AMEX

Card no:

Cardholder's name: _____

Expiry date: / Signature: _____

PLEASE NOTE: No refunds for cancellations made within 2 weeks of the course or for 'no shows'. Delegates can be substituted. If the minimum number of delegates is not achieved, delegates will be notified 1 week prior to course start date and fees will be refunded.