



Snowden is a member of the AusIMM

PROFESSIONAL DEVELOPMENT TRAINING COURSES

1-day Professional Development Courses: PERTH & BRISBANE

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 equivalent to our 4-day Grade Control & Reconciliation course.

Training courses	City	Course dates in 2010			
Introduction to Geostatistics	PERTH	3 May	26 July	11 Oct	29 Nov
	BRISBANE	31 May	18 Oct		
Successful Sampling & QAQC of Assay Data	PERTH	4-5 May	27-28 July	12-13 Oct	30 Nov-1 Dec
	BRISBANE	1-2 June	19-20 Oct		
Grade Control and Practical Reconciliation	PERTH	6-7 May	29-30 July	14-15 Oct	2-3 Dec
	BRISBANE	3-4 June	21-22 Oct		

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?
- Statistical inputs to estimation

Course Content: SUCCESSFUL SAMPLING and QAQC OF ASSAY DATA

Day 1: This Successful Sampling 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: This QAQC of Assay Data 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.



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Course Content: GRADE CONTROL and PRACTICAL RECONCILIATION

Day 1: This Grade Control course will show you how to control your ore mining in both 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: This Practical Reconciliation course reviews and investigates the calculation and interpretation of claimed grade control, resource and reserve numbers, and their relationship with plant figures.

You 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.

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

Richard Sulway - Principal Consultant - Applied Geosciences

MAppSC University of New South Wales, 1995 BAppSC (Hons) (Geology) University of Technology Sydney, MAusIMM The Geological Society of Australia.



Richard is a geologist with over 18yrs experience in exploration, mining and resource estimation. Prior to joining Snowden, Richard worked as technical consultant for Datamine mining software. Since joining Snowden, Richard has worked on a range of projects worldwide including gold, copper, iron ore, PGE, and nickel deposits. Richard provides resource estimation mentoring to the mining industry and develops and presents Snowden's technical courses.

Lynn Olssen - Principal Consultant - Applied Geosciences

BSc (Geology), University of Western Australia; (CP) MAusIMM.



Lynn has more than 16 years experience in the mining industry. Prior to commencing work with Snowden she worked in resource evaluation and mining geology roles in Western Australia gold and copper deposits. Lynn joined Snowden in April 2002 with skills in resource estimation, reconciliation, geostatistical analysis, database quality assurance and quality control, and grade control. Since joining Snowden Lynn has worked on resource estimation projects and reviews for gold, copper, nickel, iron ore, base metals, mineral sands and platinum reef deposits around the world. She is also involved in providing resource estimation mentoring to the mining industry and is a developer and presenter of Snowden's technical courses.

John Graindorge - Senior Consultant - Applied Geosciences

BSc (Hons) (Geology), UWA; MAusIMM (CP)



John has more than seven years experience in the Western Australian mining industry, working primarily on underground narrow lode gold deposits. Since joining Snowden in 2005, John has gained resource evaluation experience in Au, Au-Cu, Ni-sulphide, Pt-Ni-sulphide, iron ore and Bushveld platinum deposits, and has specialist skills in QAQC and sampling. John also develops and presents Snowden's technical training courses.

Michael Andrew - Divisional Manager - Applied Geosciences Perth

BSc, Australian National University; Postgraduate Certificate in Geostatistics, Edith Cowan University; MAusIMM



Michael has more than 20 years experience in the mining industry working in exploration and mining throughout Australia and overseas. Prior to joining Snowden Mining in November 2003, he was employed by Newmont Australia (previously Normandy Mining) as a senior resource geologist involved in resource estimation and optimisation of a range of commodities and deposit styles. Michael has specific experience in geostatistical resource estimation, optimisation of both open-cut and underground resources, grade control and risk assessment. Since joining Snowden, Michael has been involved in simulation risk studies, resource estimates, resource review and audits, mine valuation studies and the development & presents Snowden's technical training courses.



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David Arnott - Divisional Manager - Applied Geosciences Brisbane

BAppSc (Geol), University of Technology, Sydney



David has more than 20 years experience in the mineral resources sector, having commenced his career in exploration then moving through to roles in production, supply and consulting. Developing high-end Vulcan software skills throughout the better part of his career has seen David highly sought after to determine best practice workflows and methodologies, providing detailed end-user documentation to enable others to operate the workflow, in addition to technical documentation on the mechanics of the process. He has experience in modelling and resource estimation in a variety of commodity types including, but not limited to, coal, epithermal Au, base metals, manganese, oil shale, refractory clay, and construction materials. David has worked in terrains throughout Australia and abroad such as Japan, Indonesia, New Zealand, Poland, Jordan, and the United Kingdom. A member of the AusIMM he has Chartered Practising status and is deemed a Competent Person with regard to the reporting of coal, epithermal gold and base metal resources. David also develops and presents Snowden's technical training courses.

Cindy-Lee Cox - Senior Consultant - Applied Geoscience

GradDip (MEng), BAppSc (Geol), MSoc MME, ASMB, MAusIMM.



Cindy-Lee has 25 years of experience working in the resource industry. Commencing her career as an exploration geologist she has worked within a number of operations in coal, gold and base metals, in positions up to Senior Mine Geologist. Some of the tasks she was involved with included database administration and preparation, performance analysis, ore reserve calculations and QAQC. She has also held positions lecturing at the University of Ballarat. Cindy-Lee has extensive knowledge and application skills in Vulcan, Surpac, Whittle, Datamine and other mine planning packages. Cindy also develops and presents Snowden's technical training 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"

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."

The 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"



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Fees

Payment required at time of registration.

The 1-day Introduction to Geostatistics course costs AU\$1,430 + GST per person.

The 2-day Successful Sampling and QAQC of Assay Data course costs AU\$2,860 + GST per person

The 2-day Grade Control & Practical Reconciliation course costs AU\$2,860 + GST per person

These fees include a comprehensive reference manual, refreshments and lunch.

PLEASE NOTE:

- A 10% discount is offered for booking on 2 or more of these courses
PLUS
- A 5% discount is offered if paying by credit card.

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 to training@snowdengroup.com

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

Snowden Office Contact Details

PERTH +61 8 9213 9213 BRISBANE +61 7 3231 3800 JOHANNESBURG +27 11 782 2379
VANCOUVER +1 604 683 7645 BELO HORIZONTE +55 (31) 3222-6286 LONDON +44 1932 268701



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REGISTRATION FORM

To: Snowden Mining Industry Consultants, PO Box 77, West Perth, WA 6872 Tel: +61 8 9211 8670
Fax: +61 8 9322 2576 Email: training@snowdengroup.com

Please tick the courses, location, and dates you would like to attend

Training courses	City	Course dates in 2010				Fee
<input type="checkbox"/> Introduction to Geostatistics	<input type="checkbox"/> PERTH	<input type="checkbox"/> 3 May	<input type="checkbox"/> 26 July	<input type="checkbox"/> 11 Oct	<input type="checkbox"/> 29 Nov	AU\$1,430 + GST = \$1,573
	<input type="checkbox"/> BRISBANE	<input type="checkbox"/> 31 May	<input type="checkbox"/> 18 Oct			AU\$1,430 + GST = \$1,573
<input type="checkbox"/> Successful Sampling and QAQC of Assay Data	<input type="checkbox"/> PERTH	<input type="checkbox"/> 4-5 May	<input type="checkbox"/> 27-28 July	<input type="checkbox"/> 12-13 Oct	<input type="checkbox"/> 30 Nov-1 Dec	AU\$2,860 + GST = \$3,146
	<input type="checkbox"/> BRISBANE	<input type="checkbox"/> 1-2 June	<input type="checkbox"/> 19-20 Oct			AU\$2,860 + GST = \$3,146
<input type="checkbox"/> Grade Control and Practical Reconciliation	<input type="checkbox"/> PERTH	<input type="checkbox"/> 6-7 May	<input type="checkbox"/> 29-30 July	<input type="checkbox"/> 14-15 Oct	<input type="checkbox"/> 2-3 Dec	AU\$2,860 + GST = \$3,146
	<input type="checkbox"/> BRISBANE	<input type="checkbox"/> 3-4 June	<input type="checkbox"/> 21-22 Oct			AU\$2,860 + GST = \$3,146
Total, less 10% discount for booking on 2 or more courses						AU\$
Total, less 5% discount if paying by credit card*						AU\$
TOTAL including GST:						AU\$
PLEASE REMEMBER: Attendees are to bring their own laptops to these courses.						

Delegate Name	
Position (in company)	
Company Name	
Address	
Tel	
Fax	
Email	
How did you hear about the course?	<input type="checkbox"/> Email <input type="checkbox"/> Snowden Website or <input type="checkbox"/> Newsletter <input type="checkbox"/> AusIMM <input type="checkbox"/> AIG <input type="checkbox"/> Other Advert _____ <input type="checkbox"/> Other _____

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
- Electronic transfer. Please quote the course name on your EFT transaction.**
ANZ Bank, Corner Hay and Outram Street, West Perth, WA 6005
Branch: 016498 Account: 8376 99407 Swift Code: ANZBAU3M
- Credit card: *5% discount offered for credit card payments.**
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.