

Practical Rock Mechanics in Mining Short Course and Managing Seismic Risks in Underground Mines Short Course

14–18 May 2018 | The University Club, The University of Western Australia, Perth, Western Australia

REGISTRATION BROCHURE

Practical Rock Mechanics in Mining Short Course

Monday 14 – Wednesday 16 May 2018

This course is designed to develop specific open pit and underground mining geomechanics competencies for mine geologists and engineers so their contribution to mine site geomechanics programmes is enhanced.

The course could be of particular benefit to geomechanics personnel with limited practical experience and is applicable to both open pit and underground mining workers.

Course topics include:

- Intact rock strength
- Discontinuities
- Rock mass classification
- Core logging and geotechnical mapping
- Stress measurements
- Rock mass failure criteria
- Data collection strategy
- Underground geomechanics mine design
- Open pit geomechanics design
- Groundwater management
- Numerical modelling
- Monitoring underground mines
- Monitoring open pit mines
- Stope reconciliation
- Introduction to probabilistic design

Course Facilitators:



Professor Phil Dight
Professor of Geotechnical Engineering
Australian Centre for Geomechanics



Dr Johan Wesseloo
Senior Research Fellow – Rock Engineering
Project Leader – mXrap Development
Australian Centre for Geomechanics

Managing Seismic Risks in Underground Mines Short Course

Thursday 17 – Friday 18 May 2018

Hard rock mines in deep and high-stress environments often require the use of seismic systems to enable operators to manage seismic risk posed to the workforce, the mining investment and the environment. Seismic data is also used in assessing the rock mass response to mining activities where source parameters are used in the interpretation of rock mass failure mechanisms, the calibration of numerical modelling, and the interpretation of failure mechanics of the rock mass.

This course is designed to introduce mine geotechnical engineers to basic mine seismology concepts and their application in mining. Geotechnical engineers who work on medium to high risk seismic mines would benefit most from this course.

Course topics include:

- Data collection
- Seismic response to mining
- Control measures
- Seismic risk assessment

Course Facilitators:



Gerhard Morkel
Research Engineer
Australian Centre for Geomechanics



Dr Johan Wesseloo
Senior Research Fellow – Rock Engineering
Project Leader – mXrap Development
Australian Centre for Geomechanics

For programmes and information on other courses visit

www.acg.uwa.edu.au/events

Practical Rock Mechanics in Mining Short Course Programme*

Day 1

Monday 14 May 2018

PRACTICAL ROCK MECHANICS IN MINING SHORT COURSE PROGRAMME*	
08:00	REGISTRATION
08:20	Welcome and introduction <i>Dr Johan Wesseloo, Australian Centre for Geomechanics</i>
08:30	Intact rock strength <i>Dan Cumming-Potvin, Australian Centre for Geomechanics</i>
09:00	Discontinuities <i>Dr Johan Wesseloo, Australian Centre for Geomechanics</i>
10:30	MORNING BREAK
11:00	Rock mass classification <i>Dr Johan Wesseloo, Australian Centre for Geomechanics</i>
12:00	Core logging and geotechnical mapping <i>Dr Johan Wesseloo, Australian Centre for Geomechanics</i>
12:30	LUNCH
13:30	Stress measurements <i>Professor Phil Dight and Dr Ariel Hsieh, Australian Centre for Geomechanics</i>
14:30	AFTERNOON BREAK
15:00	Rock mass failure criteria <i>Professor Phil Dight, Australian Centre for Geomechanics</i>
16:00	Data collection strategy <i>Dr Johan Wesseloo, Australian Centre for Geomechanics</i>
17:00	Questions and discussion
17:00	DAY ONE CLOSE

Day 2

Tuesday 15 May 2018

PRACTICAL ROCK MECHANICS IN MINING SHORT COURSE PROGRAMME*	
08:30	Underground geomechanics mine design <i>Professor Phil Dight, Australian Centre for Geomechanics</i>
10:00	MORNING BREAK
10:30	Underground geomechanics design – continued, <i>Professor Phil Dight, Australian Centre for Geomechanics</i>
11:30	Open pit geomechanics design <i>Professor Phil Dight, Australian Centre for Geomechanics</i>
12:30	LUNCH
13:30	Open pit geomechanics design – continued <i>Professor Phil Dight, Australian Centre for Geomechanics</i>
15:00	AFTERNOON BREAK
15:30	Numerical modelling overview <i>Dr Johan Wesseloo, Australian Centre for Geomechanics</i>
16:30	DAY TWO CLOSE

Day 3

Wednesday 16 May 2018

PRACTICAL ROCK MECHANICS IN MINING SHORT COURSE PROGRAMME*	
08:30	Numerical modelling overview – continued <i>Dr Johan Wesseloo, Australian Centre for Geomechanics</i>
09:30	MORNING BREAK
10:00	Monitoring underground mines <i>Dan Cumming-Potvin, Australian Centre for Geomechanics</i>
11:00	Monitoring open pit mines <i>Professor Phil Dight, Australian Centre for Geomechanics</i>
12:00	LUNCH
13:00	Introduction to probabilistic design <i>Dr Johan Wesseloo, Australian Centre for Geomechanics</i>
15:00	AFTERNOON BREAK
15:30	Introduction to seismic monitoring in mines <i>Gerhard Morkel, Australian Centre for Geomechanics</i>
16:30	Questions and discussion
16:45	SHORT COURSE END – DRINKS AND SAVOURIES

Sponsorship opportunities are available.

Please contact ACG Marketing Manager Josephine Ruddle for further information.

josephine.ruddle@uwa.edu.au

*Programme correct at time of printing, subject to change.

Managing Seismic Risks in Underground Mines Short Course Programme*

Day 4

Thursday 17 May 2018

MANAGING SEISMIC RISKS IN UNDERGROUND MINES SHORT COURSE PROGRAMME*	
08:00	REGISTRATION
INTRODUCTION	
08:20	The seismic risk management process <i>Dr Johan Wesseloo, Australian Centre for Geomechanics (ACG)</i>
08:50	Historical cases <i>Gerhard Morkel, ACG</i>
10:10	Basic rockburst and seismicity concepts <i>Dr Johan Wesseloo, ACG</i>
11:00	MORNING BREAK
DATA COLLECTION	
11:30	Introduction <i>Gerhard Morkel, ACG</i>
11:50	Seismic data collection <i>Gerhard Morkel, ACG</i>
12:15	LUNCH
13:15	Data quality <i>Gerhard Morkel, ACG</i>
14:15	Rockburst data collection <i>Daniel Cumming-Potvin, ACG</i>
14:45	AFTERNOON BREAK
SEISMIC RESPONSE TO MINING	
15:15	Introduction <i>Dr Kyle Woodward, ACG</i>
15:30	Numerical modelling <i>Dr Johan Wesseloo, ACG</i>
15:50	Characterisation of sources <i>Stuart Tierney, ACG</i>
16:30	Questions and discussion
17:00	DAY FOUR CLOSE

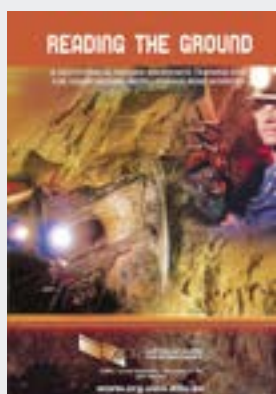
Day 5

Friday 18 May 2018

MANAGING SEISMIC RISKS IN UNDERGROUND MINES SHORT COURSE PROGRAMME*	
SEISMIC RESPONSE TO MINING	
08:30	Forensic and back analysis <i>Gerhard Morkel, ACG</i>
09:15	Short term response/MOL <i>Dr Kyle Woodward, ACG</i>
10:15	MORNING BREAK
10:45	Seismic hazard assessment <i>Stuart Tierney, ACG</i>
CONTROL MEASURES	
11:45	Introduction <i>Daniel Cumming-Potvin, ACG</i>
12:00	Ground Support <i>Daniel Cumming-Potvin, ACG</i>
13:00	LUNCH
14:00	Exposure <i>Stuart Tierney, ACG</i>
14:45	Mine design <i>Stuart Tierney, ACG</i>
15:15	Rock mass <i>Daniel Cumming-Potvin, ACG</i>
15:30	Reporting and risk management <i>Dr Johan Wesseloo, ACG</i>
16:00	Questions and discussion
16:30	DAY FIVE CLOSE - DRINKS AND SAVOURIES

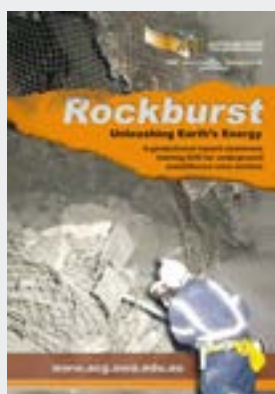
*Programme correct at time of printing, subject to change.

To order these and other training DVDs, please visit acg.uwa.edu.au/shop/



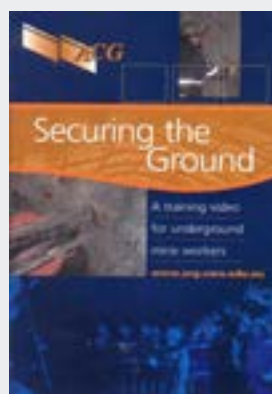
Reading the Ground

A Geotechnical Hazard Awareness Training DVD for Underground Metalliferous Mine Workers



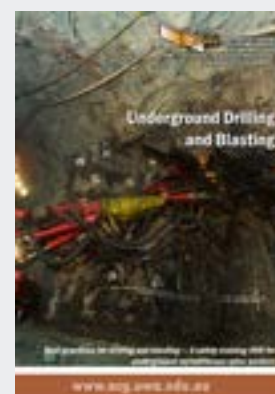
Rockburst

Unleashing Earth's Energy A Geotechnical Hazard Awareness Training DVD for Underground Metalliferous Mine Workers



Securing the Ground

A Geotechnical Hazard Awareness Training DVD for Underground Mine Workers



Underground Drilling and Blasting

Best Practices for Drilling and Blasting - A Safety Training DVD for Underground Metalliferous Mine Workers

Training DVDs

Practical Rock Mechanics in Mining Short Course and Managing Seismic Risks in Underground Mines Short Course

14–18 May 2018 | The University Club, The University of Western Australia, Perth, Western Australia

REGISTRATION FORM

CONTACT DETAILS

Please print. *denotes mandatory fields.

*Title (Mr, Mrs, Miss, Ms, Dr, Prof., other) _____

*Family Name _____

*First Name _____

Preferred Name _____

*Position _____

*Organisation _____

Mine/Dept _____

*Address _____

Phone _____

Fax _____

Mobile _____

*Email _____

*All confirmations/event updates will be sent via email

Registrants contact details are intended to be published in the events authorised attendee list made available to event attendees, who may contact you, including electronically.

I give permission for my details to be included in the event attendee list.

I give permission for the ACG to send me ACG research, training and/or education information advice, including electronic communications.

I require an invitation letter for visa purposes (please forward a copy of your passport information page). For more information regarding Australian visas, please visit acg.uwa.edu.au/about-events-and-courses

DELEGATE CANCELLATIONS

Up to 8 days before event(s) commencement: an administration fee of AUD 150 will be charged. 7 or less days before: no refund. Non-attendance: no refund. Substitutions will be accepted at any time. The ACG reserves the right to cancel the short courses if insufficient registrations are received.

† Please visit www.acg.uwa.edu.au/corp_affiliates to view the list of ACG Corporate Affiliates.

^ Students are required to provide proof of full-time enrolment at time of registration.

Practical Rock Mechanics in Mining Short Course (1830) 14–16 May 2018

	Earlybird Paid before 9 April 2018	Standard Paid after 9 April 2018
Standard	<input type="checkbox"/> 1,980	<input type="checkbox"/> 2,200
ACG Affiliate†	<input type="checkbox"/> 1,760	<input type="checkbox"/> 1,980
Student^	<input type="checkbox"/> 660	<input type="checkbox"/> 990

Managing Seismic Risks in Underground Mines Short Course (1831) | 17–18 May 2018

	Earlybird Paid before 9 April 2018	Standard Paid after 9 April 2018
Standard	<input type="checkbox"/> 1,760	<input type="checkbox"/> 1,980
ACG Affiliate†	<input type="checkbox"/> 1,540	<input type="checkbox"/> 1,760
Student^	<input type="checkbox"/> 440	<input type="checkbox"/> 660

PAYMENT

Total payment AUD _____

Payment to be received by 11 May 2018. All bank fees are the responsibility of the registrant. ABN 37 882 817 280

PAYMENT OPTIONS

Electronic Funds Transfer (EFT)

Please return this completed form to info-acg@uwa.edu.au and the ACG will send you an invoice with EFT details included.

PO# (if required) _____

Credit Card

Please return this completed form to info-acg@uwa.edu.au and the ACG will send you a credit authorisation form. Alternatively, please phone us on +61 8 6488 3300 to make payment. (Visa and Mastercard are the only cards we accept).

EVENT VENUE

The short course series venue is The University Club, situated at The University of Western Australia, a 10 minute taxi ride from Perth's CBD.

The University Club, The University of Western Australia

Entrance No. 1, Hackett Drive, Crawley, Perth

Ph: +61 8 6488 8770

Email: info@universityclub.uwa.edu.au

ACCOMMODATION

There are various accommodation options close to UWA. For a list of local accommodation visit acg.uwa.edu.au/about-events-and-courses.

How to register:



Australian Centre for Geomechanics
The University of Western Australia
35 Stirling Highway (M600)
Crawley WA 6009



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