



# UPCOMING COURSES – 2012



Mechanisation is a feature of almost all South African mining operations, although the degree of mechanisation may differ from mine to mine. Whether considering established mechanised soft-rock operations, or hard-rock operations where new technology is being introduced, the understanding and effective management of mechanised mining systems is essential to realising the improved safety and productivity that modern equipment promises.

The Centre for Mechanised Mining Systems offers a broad range of courses presenting the latest thinking in terms of developing and managing technology interventions. Topics covered include the fundamentals of mechanised mine design, the planning and management of mechanised operations, organisational issues and advanced mining technologies.

Courses are presented in partnership with the Wits School of Mining Engineering, and the School of Mechanical, Industrial and Aeronautical Engineering. Core lectures are delivered by subject-matter experts from Wits, industry, or international institutions. These are supplemented with case studies and guest lectures from experienced professionals. The Centre's courses are characterised by vigorous discussion, engagement and hands-on synthesis.

The Centre's five-day courses may be taken stand-alone or, along with a dissertation, form part of an MSc in Engineering. The Centre offers MSc programmes of study specialising in Mechanised Mining Systems, Mine Ventilation, and Bulk Materials Handling. Should you wish to pursue MSc or PhD research and study opportunities for personal professional development, contact the Centre to discuss the requirements and options available to you.

The Centre also offers stand-alone three-day courses which deliver focused knowledge on specialised topics.

All courses carry ECSA accreditation and CPD points.

## Five-day courses

The following are full postgraduate engineering courses, which may count towards a higher degree or diploma, or may be taken as stand-alone courses for non-degree purposes. Upon successful completion of an examination and assignment, students will receive a Wits University Certificate of Competence. Those who attend but do not complete the examination or assignment will receive a Certificate of Attendance.

### Belt conveying

16 – 20 January

Presented by Professor C Wheeler of the University of Newcastle, Australia, and Professor G Lodewijks of the Delft University of Technology, this course will provide an advanced overview of the subject of belt conveying.

### Operations management for mining systems\*

5 – 9 March

This course is led by Mrs T Hattingh of Wits industrial engineering. Expanding on the Centre's successful short course in industrial engineering, this new postgraduate course considers operational management, simulation, analysis, improvement, and change management in mining; all essential for maintaining operational competitiveness.

### Principles of ventilation

26 – 30 March

Led by Wits' Professor J Sheer, this course will provide specialised instruction on the scientific principles relevant to mine ventilation, through to the planning and implementation of mine ventilation systems.



### Trackless underground mechanised mining

14 – 18 May

Led by the Centre's Director, Professor J Porter, this course is presented by an array of experienced industry specialists. The aim of the course is to give the student deeper insight into the culture of mechanisation, the requirements for planning and managing mechanised operations, organisational issues, and the latest developments in trackless underground mining in hard rock environments.

### Earth moving equipment, technology and management

18 – 22 June

Presented by Prof Z Borowitsh of the Israel Institute of Technology, this course covers topics from fundamental rock and soil properties, through to ripping and blasting, excavator shovels and grading equipment, production measurement, machine design, and haulage roadway construction. Maintenance, cost analysis and optimisation are also considered.

### Principles of refrigeration

2 – 6 July

This course gives a thorough treatment of refrigeration processes, including thermodynamic principles, refrigeration cycles, refrigeration systems for mines, refrigerants, refrigeration system components and thermal storage. It is led by Professor J Sheer of Wits.

### Bulk solids storage and handling

9 – 13 July

Presented by Professor W McBride of the University of Newcastle, Australia, this course will demonstrate the importance of the measurement of the basic flow-related properties of bulk solids and particulates and the application of this information to the design of storage bins, and feeding and handling equipment.

### Underground environmental control\*

13 – 17 August

Wits's Professor J Sheer leads this course, covering the environmental impact and management of many underground hazards, such as hazardous substances, radiation, dust, explosive gases and fires.

### Rock cutting technology\*

1 – 5 October

Covering geotechnical issues, equipment design, performance modelling, and project management, this is a new postgraduate course for 2012, expanding on the Centre's tunnel and raise boring short course in 2011. Drilling and new developments are also covered. Presenters on this course include the Centre's Rod Pickering and Professor P Jakobsen of the Norwegian University of Science and Technology.

If you are interested in receiving further information on any of our courses or would like to be added to our mailing list, please e-mail [Debra.Gallagher@wits.ac.za](mailto:Debra.Gallagher@wits.ac.za).

### Three-day courses

Students completing these three-day courses will receive a Wits Certificate of Attendance.

### Mechanisation in coal mining

22 – 24 May

This course has been prepared for managers and engineers in South African underground coal mining operations who wish to expand and benchmark their knowledge to similar operations in the American Coal sector. It will be presented by Wits alumnus, Dr S Spearing, of Southern Illinois University Carbondale.

### Maintenance management in mining

5 – 7 July

Maintenance is a core activity in a mechanised mining operation. Based on reliability engineering principles and economic analysis, experienced lecturer and maintenance consultant E Bradley will present a broad range of case studies, and bring the latest thinking on maintenance management to the student.

### Pneumatic conveying

11 – 13 September

Presented by Dr D Mills, this course covers the principles of pneumatic conveying systems. It includes design, operation and equipment aspects.

*\*These are new postgraduate courses currently undergoing internal university accreditation.*

### Venue

Professional Development Hub (PDH) Building  
University of the Witwatersrand  
92 Empire Road (Opposite the KPMG building)  
Corner Empire Road and Jan Smuts Avenue  
Braamfontein

### Registration

Sam Moolla

Tel: +27 11 717 7329

Cell: +27 83 415 9635

Email: [Sam.Moolla@wits.ac.za](mailto:Sam.Moolla@wits.ac.za)