

*The University of the Witwatersrand and the University of  
Johannesburg present*

**SHORT COURSES FOR INDUSTRY**

***COAL SCHOOL 2***  
***– 16 to 20 March 2009 -s***

**COAL AND CBM GEOLOGY,  
EXPLORATION AND CARBON  
SEQUESTRATION**

Five-day course or daily attendance

**\*\***

Module in the Postgraduate Programme

***LEADERSHIP IN FUEL & ENERGY TECHNOLOGY***

**\*\***

**VENUE:**

Sturrock Park Sports Administration Campus  
University of Witwatersrand  
Braamfontein, Johannesburg

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**PRINCIPLE COURSE LECTURERS:**

Prof Bruce Cairncross, Univ of Jhb  
Prof Rosemary Falcon, Univ Wits/Jhb  
Mr Gerhard Esterhuizen, Coalserve/SAQA  
Mr Jack Holliday, Petroleum Consultant  
Mr Xavier Prevost, McKenzie Wood  
Dr Ricky Pinheiro, Petmin

## **COURSE OBJECTIVES**

The course seeks to provide introductory and up-dated information on the following issues:

- Origin, formation, constitution of coal,
- Coal geology, basin analysis and factors influencing quality distribution
- Techniques in coal exploration and mine planning
- DME legislations, JSE regulations and bankable documentation
- Geological factors on mining, beneficiation, marketing, and optimum utilisation
- Global and Regional oil and gas resources and reserves
- Coalbed methane
- Global and South / Southern African coal resources / reserves

## **MOTIVATION**

With the increasing demand for high quality coal products for export purposes and the ever-increasing requirements for a variety of grades of coal for local power generation, petrochemical, metallurgical and industrial use, it is now of vital importance to gain knowledge concerning the coal resources and reserves of South and Southern Africa and the nature of the products being produced.

In addition, the availability and potential use of alternative fossil fuel sources is of significant interest and in this regard an overview of the region's oil, gas and coalbed methane resources is becoming of equal relevance.

In parallel, an overview of current legislation and modern methodologies used to assess the distributions, qualities and reserves of coal, oil and gas more accurately than has been the case in the past has now become necessary, including the need to understand the methods by which geological models are developed and from which significantly improved coal mine planning, extraction, beneficiation, marketing and utilisation can be assured.

## **WHO SHOULD ATTEND THIS COURSE**

- Geologists
- Mining engineers
- Mine planners
- Mineral (coal) resource managers
- Coal processing engineers
- Marketing and trading personnel
- Industrial users of coal
- Engineering manufacturers
- Fuel technologists
- Financial funding agencies
- Government and company policy planners
- Researchers and lecturers in academia.

## **PROGRAMME TOPICS**

### **DAY 1 – 16 March 2009**

#### **COAL EXPLORATION**

- Management principles and practices to apply during coal exploration programmes;
- Mining geology principles with application to coal mining; mining methods; mine design, layout, planning and exploitation.
- Sampling methodology to apply during coal exploration programmes including the sampling and taking of sample increments in respect of bulk sample boreholes and the introduction of bias – with specific case histories in difficult geological areas
- Assessment of coal deposits and investment decision processes; current legislation and licensing.
- Contamination and dilution, and the effect on coal qualities, costs and the environment
- Public reporting of coal resources and coal reserves, the competent persons report, SAMREC and Jorc requirements; compliance; estimation and valuation of coal deposits
- Summary - risk management including geology, mining marketing and utilisation potential of reserves and their products.

### **DAY 2 –17 March 2009**

#### **COAL GEOLOGY, BASIN ANALYSIS AND SEDIMENTARY ENVIRONMENTS**

- Origin and formation of coal
- Sedimentary environments for coal formation and their effects on coal quality
- Basin analysis and ore body modelling.
- Regional settings of Southern African coal deposits;
- Factors affecting coal seam quality distribution - structural and geological settings;

### **DAY 3 – 18 March 2009**

#### **PETROLEUM, OIL AND GAS RESOURCES, COAL BED METHANE, CCS AND UNDERGROUND GASIFICATION**

- Applied use of coal seams and related strata: Coal bed methane (CBM); enhanced CBM (ECBM).
- Carbon capture and storage (CCS) in coal seams; current developments in Southern Africa
- Underground gasification – current and future developments

## **DAY 4 – 19 March 2008**

### **ADVANCED ASSESSMENTS OF COAL DEPOSITS; REGIONAL AND GLOBAL PERSPECTIVES OF COAL**

- Application of advanced coal analyses for quality assessments, washability and beneficiation potential, marketability and environmental impact
- Advanced borehole core assessments - geophysical core logging
- Review of coal resources and reserves in South Africa
- World coal resources and reserves and global trends in coal utilisation

## **DAY 5 – 20 March 20089**

### **COAL MINE VISIT**

- Visit to a coal mine with practical examples of coal seam geology, exploration, mine planning extraction and coal production.

## **CONTACT DETAILS**

### **TECHNICAL ENQUIRIES:**

Prof Falcon / Mrs Maggie Blair - 011 717-7387/8 or 082 451 4753  
[rosemary.falcon@wits.ac.za](mailto:rosemary.falcon@wits.ac.za) or [margaret.blair@wits.ac.za](mailto:margaret.blair@wits.ac.za)

### **WEEK-LONG AND DAILY INDUSTRIAL ATTENDANCE:**

Mrs Lesley Stephenson 011 447 1490 ([lstephenson@mweb.co.za](mailto:lstephenson@mweb.co.za))

### **FORMAL ACADEMIC REQUIREMENTS**

School of Mining Engineering: Mrs Mona Shah – 011 717 7403  
 School Chemical and Metallurgical Engineering: Mrs Vanessa Moodley – 011 717 7525

## **FORTHCOMING COURSES FOR 2009**

- 1- Coal Mining and Exploitation: 4-8 May 2009
- 2- Coal and Coke in the Metallurgical Industry: 8-12 June 2009
- 3- Coal Preparation and Beneficiation: 3-7 August 2009
- 4- Coal Conversion: 31 August – 4 September 2009
- 5- Coal Combustion, Power Generation and CCT: 9-13 November 2009

# COAL GEOLOGY AND EXPLORATION

## REGISTRATION - FIVE-DAY ATTENDANCE:

R6 500-00 + VAT R910.00 = R7 410-00

Email registration to: MRS L STEPHENSON. VAT No: **4270185251**  
Tel/Fax: 011 447 1490 Cell: 083 679 0697 Email: lstephenson@mweb.co.za

NAME:.....TITLE.....

AFFILIATION .....

COMPANY.....

ADDRESS.....

TEL:.....FAX.....

MOBILE.....EMAIL:.....

ACCOUNTS CONTACT PERSON.....

ACCOUNTS TEL NUMBER.....

ACCOUNTS EMAIL ADDRESS.....

COMPANY VAT NO..... VENDOR NO..... PURCHASE ORDER NO:.....

**NB: ATTENDANCE IS STRICTLY SUBJECT TO PAYMENT PRIOR TO THE COURSE**

BANKING DETAILS: *Please fax a copy of the deposit slip or EFT to (011) 447 6148 or email projects@fossilfuel.co.za.*

Fossil Fuel Foundation of Africa (Education)

Bank: ABSA

Branch Code: 632 005

Account No: 919 978 4837

Ref: **PLEASE USE THE FFF INVOICE NUMBER ON YOUR DEPOSIT SLIP OR EFT.**

### **CANCELLATION OF THIS REGISTRATION**

Cancellation may be made in writing 7 days prior to this course, whereon a 25% cancellation fee will be charged. No refund or credit will be issued within the 7 days of the course. Registrations are transferable. Invoices will be sent once registration forms have been submitted. **KINDLY NOTE: ATTENDANCE IS STRICTLY SUBJECT TO PRIOR PAYMENT**

# COAL GEOLOGY AND EXPLORATION

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R1 500-00 + VAT R210.00 = R1 710-00 per day

DAY 1..... DAY 2..... DAY 3..... DAY 4..... DAY 5.....

Email registration to: MRS L STEPHENSON.

Tel/Fax: 011 447 1490 Cell: 083 679 0697 Email: lstephenson@mweb.co.za

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