REGISTRATION FORM / TAX INVOICE
Geochemical and Reactive Transport Modelling:

PHREEQC, MT3DMS and PHT3D

University of Western Cape, Cape Town
Monday 27 November – Friday 1 December 2006

Please register early by faxing this form to
FAX: +27 21 959 3118

TITLE:.....

FIRST NAME:.....

SURNAME:.....

JOB TITLE:.....

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.....
DEPARTMENT:.....
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ADDRESS (Postal):
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CITY:.....
STATE: .....
POSTCODE: .....

PH: .....
FAX: .....

EMAIL:.....
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SIGNATURE:…….

AMOUNT DUE:

Before 30 June	R5 700 (U$ 950)
Before 1 October	R6 840 (U$ 1140)
After 1 October	R8 000 (U$ 1300)

BANK DEPOSITS:

Institution:	ABSA Bank
Name of Account:	Administered Funds
Branch:	Tygermanor – Public Sector Western Cape
Account no.:	4050 8940 67
Branch Code:	631609
Swift Code:	ABSAZAJJ
Reference:	Entity:338375 - *Own Surname*

Please fax proof of payment /deposit slip to:
UNESCO Chair, Fax: +27 21 959 3118

FOR MORE INFORMATION CONTACT

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Short Course
Geochemical and Reactive Transport Modelling

PHREEQC, MT3DMS, PHT3D

27 November -1 December 2006
Cape Town, South Africa

A 5-day international specialist course for consultants, engineers and scientists from private consulting firms, government environmental agencies, mining/industrial companies and postgraduate students.

Lecturers:

Prof. Chunmiao Zheng
Professor of Hydrogeology at the University of Alabama
Dr Henning Prommer
Research Scientist, CSIRO Land and Water, Australia
Dr Vincent Post
Assistant Professor at the Free University Amsterdam

Supported by
UNESCO Chair in Hydrogeology
CSIR
Institute for Groundwater Studies
Water Research Commission

Course Leaders

The course will be presented by international experts, including: **Prof. Chunmiao Zheng**, Professor of Hydrogeology at the University of Alabama and developer of the world's most widely used solute transport model *MT3D/MT3DMS*; **Dr Henning Prommer**, Research Scientist at CSIRO Land and Water Australia and author of the MODFLOW/MT3DMS-based reactive transport model *PHT3D;* and **Dr Vincent Post**, Assistant Professor at the Free University Amsterdam and author of the popular graphical user interface *PHREEQC for Windows*.

Taking this short course will help groundwater practitioners:

- Understand the basics of geochemical as well as solute and reactive transport modelling.
- Learn how to apply state-of-the-art models to real-world water quality problems.
- Apply the theoretical framework with hands-on experience in the computer lab.
- Use the modelling tools MODFLOW, MT3DMS, PHREEQC-2 and PHT3D (which combines MT3DMS and PHREEQC-2).

When

Monday 27 November – Friday 1 December 2006

Where

EMS Building, Groundflour BOE Computer Lab, University of the Western Cape, Cape Town.

Who should attend

The course is aimed at consultants, engineers and scientists who undertake modelling studies of groundwater flow, transport and geochemical reactions as part of their work. Prior transport modelling experience is not a requirement but a basic knowledge of groundwater flow and geochemical processes and ideally some previous exposure to modelling will increase the benefits from the course.

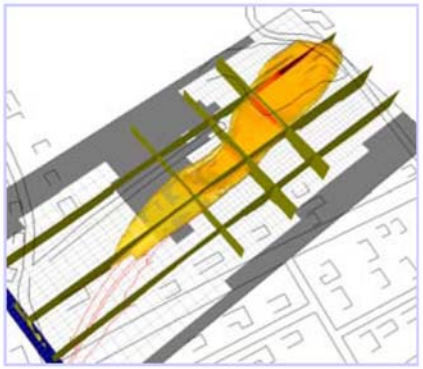
Course Outline

The course is designed to introduce the participants to the model-based quantification of a wide range of water quality problems from various industries and disciplines, e.g., contaminant hydrology, mining and water supply.

Covered topics include:

- basics of advective and dispersive solute transport
- development of conceptual models
- numerical solution schemes
- constructing MODFLOW/MT3DMS flow and solute transport models
- overview of hydrochemical processes
- principles of modelling biogeochemical processes such as complexation reactions, sorption, mineral dissolution/precipitation, ion exchange, NAPL dissolution, biodegradation, and microbial growth/decay
- modelling of equilibrium and kinetically controlled reactive processes with PHREEQC
- combined modelling of transport and chemical reactions using PHT3D
- selected model applications for organic pollution problems (e.g., natural attenuation of aromatic/chlorinated hydrocarbons and pesticides, bioremediation), fate of inorganic pollutants (e.g., ammonium plumes, mine tailings impact on groundwater, TCE degradation in zero-valent iron barriers), water supply (ASR, deepwell injection) and salinity problems.
- introduction to advanced modelling topics such as kinetic isotope effects and reactive transport under variable-density conditions

Approximately half the time of the course is devoted to computer labs. Simplified exercises that are based on real-world problems will help participants to translate theory into practice.



Accommodation

Accommodation information is available. Please contact Caroline Barnard (unescochair@uwc.ac.za) if you would like this information sent to you.

Course Fees and Registration

Before 30 June	R5 700 (U$ 950)
Before 1 October	R6 840 (U$ 1140),
After 1 October	R8 000 (U$ 1300)

Prices include VAT.

To register: Complete and fax the back page.

Prerequisites

Participants will benefit the most from this short course if they have a working knowledge of groundwater models and geochemical processes.

Course Enrollment

A maximum of 30 applicants will be able to attend the course due to space limitations. The fee includes course documentation, refreshments and lunches. It does not include accommodation. If cancellations are made before 1 October 2006, 50% of fee will be refunded (substitutions are permitted until the start of the course). Organizers retain the right to cancel the course. Might that be the case, the registered participants will be informed before 1 October 2006, and the fee will be refunded.