

# Laboratory Testing in Geotechnical Engineering



Australian Geomechanics Society WA Chapter

## EVENT DETAILS

### Date:

Tuesday, 14 February 2012 and  
Wednesday, 15 February 2012

### Time:

Tuesday 9.00 am – 5.00 pm  
Wednesday 9.00 am – 5.00 pm

### Venue:

ELT2, Civil & Mechanical  
Engineering Building, UWA.

### Cost (ex GST):

AGS & EA Members \$950  
Non Members \$1050

Places are limited to a maximum  
number of **30**.

Lunch and light snacks will be  
provided.

Delegates will be provided with a  
set of course notes.

### RSVP:

Friday, 10 February 2012

**Cancellation Policy:** No refunds will be  
given after 10 February 2012. Substitutes  
will be accepted.

**To Register:** See page 3 of this  
flyer

## Enquiries

Peter Robinson  
Australian Geomechanics Society  
Ph (02) 9144 7519

The Western Australian Chapter of the **Australian Geomechanics Society (AGS)** provides notice of a course to be held on Laboratory Testing in Geotechnical Engineering. The course describes the various laboratory tests that can be used to obtain design parameters for geotechnical engineering problems; it details advantages and disadvantages of different tests, shows the type and magnitude of errors that can occur and their implications; it discusses, through hands-on computer applications, how to obtain suitable design parameters for a range of applications.

### Topics covered

- Overview of laboratory strength and stiffness testing devices
- Sample types, recovery and treatment
- Effects of sampling disturbance
- Test specification
- Equipment, preparation, procedures and corrections
- Interpretation of results
- Errors and limitations
- Comparison of test results with expected behaviour patterns
- Specialised testing
  - Rowe cell
  - Simple shear and cyclic triaxial
  - Interface shear testing
  - Shear wave velocity measurement
- Derivation of parameters for FE (Plaxis) constitutive models
- Tutorials on parameter derivation

### Course presenters:

The course will be presented by UWA lecturers: Prof. Barry Lehane, Prof. Andy Fourie and Asst/Prof. James Doherty. Each presenter has extensive practical experience of laboratory testing and its application to geotechnical design.

### Who should attend ?

Consulting engineers, contractors and project managers who need a better understanding of which design parameters can realistically be obtained from a testing programme, and the source and nature of errors that may occur during testing.

712 Murray Street, West Perth WA 6005  
Phone: (08) 9321 3340 • Fax: (08) 9481 4332  
E-mail: wa@engineersaustralia.org.au  
Website: www.wa.engineersaustralia.org.au



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# PROGRAMME

## DAY 1 – TUESDAY, 14 FEBRUARY 2012

START TIME	ITEM	PRESENTERS
08.30 – 09.00	Registration	
09:00 – 09:05	Welcome by AGS Chairperson	Nina Levy
09.05 – 09.25	Introduction and overview	Barry Lehane
09.25 – 9:40	Basic revision of soil strength	Barry Lehane
09:40 – 10:30	Triaxial testing and interpretation	Andy Fourie
10.30 – 11.30	Coffee break and tours of UWA geotechnical laboratory	Claire Bearman and Binaya Bhattacharai
11:30 – 12:00	Oedometer testing and interpretation	Barry Lehane
12:00 – 12:30	Direct Shear testing and interpretation	James Doherty
12:30 – 13:30	Lunch	
13.30 – 14:10	Effects of sampling, material variability and structure	Barry Lehane
14:10 – 15:00	Specification of laboratory tests	Andy Fourie
15.00 – 15.20	Coffee Break	
15:20 – 16:40	Workshop on parameter determination and application in design	James Doherty, Andy Fourie & Barry Lehane
16:40 – 17:00	Overview and feedback	

## DAY 2 – WEDNESDAY, 15 FEBRUARY 2012

START TIME	ITEM	PRESENTERS
09.00 – 9.30	Simple shear testing and interpretation	James Doherty
09.30 – 9:45	Direct shear residual strength and Interface testing	Barry Lehane
9:45 – 10:05	Rowe Cell testing and interpretation	Andy Fourie
10.05 – 10:30	Cyclic testing and interpretation	Barry Lehane
10:30 – 10:45	Shear wave velocity measurement	Andy Fourie
10:45 – 11:15	Coffee break	
11:15 – 11:30	Deriving Mohr Coulomb model parameters	Barry Lehane
11:30 – 12:30	Deriving parameters for the hardening soil and soft soil creep models	James Doherty
12:30 – 13:30	Lunch	
13:30 – 14:30	Modelling simple shear and triaxial elements in Plaxis	James Doherty
14:30 – 15:00	Workshop Part 1 on derivation of parameters for constitutive models and application in Plaxis	James Doherty, Andy Fourie & Barry Lehane
15:00 – 15:20	Coffee Break	
15:20 – 16:30	Workshop Part 2 on derivation of parameters for constitutive models and application in Plaxis	James Doherty, Andy Fourie & Barry Lehane
16:30 – 17:00	Questions and Answers	

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# WA 2012 - Laboratory Testing in Geotechnical Engineering

## REGISTRATION FORM AND TAX INVOICE

REGISTRATION FEES (including GST)	Cost	Number of Attendees	TOTAL (incl. GST)
Member – AGS or EA	\$950		\$
Non Member:	\$1,050		\$
		<b>TOTAL</b>	<b>\$</b>

<b>Organisation</b>		
<b>Address</b>		
<b>Contact phone</b>		
<b>Contact email</b>		
<b>Name</b>	<b>Position</b>	<b>AGS Member Y/N</b>

Please photocopy for extra bookings

<b>METHOD OF PAYMENT: (Registration and payment upon registration)</b>
1. My cheque for \$ _____ is enclosed (payable to <u>Australian Geomechanics Society</u> ) or
2. Electronic funds transfer to Commonwealth Bank BSB 062-910 Account 1001-3510 (Quote Organisation/Name)
3. <input type="checkbox"/> MasterCard <input type="checkbox"/> Visa    (Sorry but Diners Club and American Express cannot be accepted)
Expiry date: _____ Card No. _____
Cardholder Name: _____ Signature: _____
<b><i>EASY REGISTRATION BY EMAIL OR MAIL</i></b>
<b>MAIL:</b> Australian Geomechanics Society PO Box 955 St Ives, NSW 2075
<b>Phone:</b> (02) 9144-7519
<b>E-MAIL:</b> <a href="mailto:secretary@australiangeomechanics.org">secretary@australiangeomechanics.org</a>
<b>Australian Geomechanics Society, ABN 89 615 696 393</b>

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