

**REGISTRATION – 2 EASY WAYS TO REGISTER!!**

**MAIL or FAX to:**



Professional Activities Centre  
Faculty of Engineering  
National University of Singapore  
9 Engineering Drive 1  
Blk EA #05-34, Singapore 117576

**Enquires:** Please contact Mr. Gabriel Ong for more information at  
Tel: (65) 6516 5113 Fax : (65) 6874 5097 or  
E-mail: [engokhg@nus.edu.sg](mailto:engokhg@nus.edu.sg)  
Website : <http://www.eng.nus.edu.sg/PACentre>

**Fees : \$888 (IES / IStructE Members) / \$988 (Non-Members)**

*\* Fees are inclusive of 7% GST, course materials, lunch and light refreshment.*

**Payment :** Payment is required prior to the course.

**Refunds and Cancellations:** A 50% refund will be made for withdrawals (received in writing) ten working days before the commencement of the course. No refunds will be made thereafter. However, a replacement will be accepted upon prior arrangement at no extra cost. Please inform us of the changes, if any, by fax. The Professional Activities Centre reserves the right to cancel the course and fully refund the participants, should unforeseen circumstances warrant it. Every effort will be made to inform participants of any changes.

**Confirmation of Registration**

Confirmation of registration will be given 5 working days prior to the commencement date via email, and you are required to acknowledge it. If you do not receive the said confirmation email, you are required to contact us immediately at +65 6516 5113.

We reserve the right to allow only confirmed registrants to attend the event.

**Closing Date: 23 December 2009**

The *Institution*  
of *Structural*  
Engineers

Two-Day Course on  
**Design of Concrete  
Structures to Eurocode 2**



Organiser : IES / IStructE Joint Committee  
Date : 27 & 28 January 2010 (Wed & Thurs)  
Time : 8.30am to 5.30pm  
Venue : Novotel Clark Quay Singapore, River Valley Rd.  
CPD : 14 PDUs (to be confirmed)  
Fees : \$888 (IES / IStructE Members)  
\$988 (Non-Members)

*Fees are inclusive of 7% GST, a \$94 course book, lunches and light refreshments.*

In March 2010, all fifty-seven structural design British Standards published by BSI will be withdrawn and replaced by the new suite of fifty-eight structural design Eurocodes and National Annexes. These Eurocodes, developed over many years, will now become the definitive design standards across Europe and in many countries worldwide where British and other European Standards have been previously adopted. As part of this process, EN 1992: Design of Concrete Structures (Eurocode 2) will replace BS 8110, and whilst there are many similarities in principle between the two codes, there are some significant differences in both principle and detail.

**About the Course**

This course is aimed at civil and structural engineers seeking an understanding of the general rules, main features and changes contained in Eurocode 2 and the accompanying UK National Annex. Reference will be made to the accompanying codes EC (*Basis of Structural Design*) and EC1 (*Actions on Structures*). The course will cover the Eurocode system, basis of design, structural loading, material properties, design at the ultimate limit state and the serviceability limit state. Verification for fire resistance using the method of 'tabulated data for member analysis' will be explained. Work examples with direct reference to the code clauses will be used to illustrate the application of the code requirements.

## Course Outline

- Introduction to and overview of Eurocodes
- EC and EC1: Actions and combinations of actions
- Introduction to EC2
- Simplified load arrangements Clause 5.1.3(1)P and UK NA Materials, durability, fire,
  - (exposure class, cover, axis distance, crack widths)
- Development and application of flexural design equations for singly and doubly reinforced sections
- One-way spanning slabs
- Beams
- Flanged beams
- Development and application of design equations for shear and torsion
- Deflection
- Bond, anchorage lengths, lap lengths, curtailment etc.
- Two-way spanning slabs.
- Flat slabs.
- Punching shear.
- Combined axial and uniaxial bending for short/slender columns.
- Combined axial and biaxial bending for short/slender columns.
- Introduction to EC7: Geotechnical design.
- Spread footings.
- Where to go from here – sources of further information.

## Course Book

A copy of the text book entitled “Reinforced Concrete Design to Eurocode 2” (Costs \$94.00). Authors: Bill Mosley, John Bungey and Ray Hulse, will be provided to all participants.

## Target Audience

Civil & Structural Engineers, Designers and Contractors.

## CV of Speakers



**Ray Hulse** BSc, MSc, CEng, FICE

Ray is a Chartered Civil Engineer and a Fellow of the Institution of Civil Engineers (ICE). He was, until recently, the Associate Dean in the Faculty of Engineering and Computing at Coventry University. He has over 35 years experience of teaching, research and consultancy including a period spent at NTI (now NTU) in Singapore. He currently works for the ICE as a Regional Membership Development Officer and is Director of his own educational consultancy company. His publications include nine co-authored textbooks including *Reinforced Concrete Design to Eurocode 2* and he has, in the past two years, presented many public and in-company courses on Eurocode 2.



**Bill McKenzie** BSc, PhD, CPhys, MInstP, CEng

Bill is a Lecturer in Structural Engineering at Edinburgh Napier University on undergraduate and postgraduate courses, including the MSc course in Advanced Structural Engineering. He graduated from Heriot-Watt University, Edinburgh and has been involved in consultancy, research and teaching for almost 35 years. His publications include one structural analysis textbook and five design textbooks in addition to research papers relating to stress analysis using holographic interferometry. As a member of the Institute of Physics he is both a Chartered Engineer and a Chartered Physicist. He has presented several CPD courses and guest lectures to industry, in relation to the introduction and use of Eurocodes.

**REGISTRATION FORM**

**Design of Concrete Structures to Eurocode 2**

**Wed, 27 & Thu, 28 January 2010**

**08.30am to 05.30pm, Novotel Clark Quay Singapore**

**Fees : \$888 (IES / IStructE Members) / \$988 (Non-Members)**

*\* Fees are inclusive of 7% GST, course book, lunch and light refreshment.*

Name: \_\_\_\_\_

NRIC: \_\_\_\_\_ Designation: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Tel: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Please indicate:

IES members IES membership No.: \_\_\_\_\_

IStructE members IStructE membership No.: \_\_\_\_\_

Non-members  Sponsored by company

P.E. No.: \_\_\_\_\_ (if applicable)

**Payment Mode:**

Cheque No: \_\_\_\_\_ Amount (S\$): \_\_\_\_\_

Crossed cheques should be made payable to **“National University of Singapore”** and mailed together with the registration form to:

**Professional Activities Centre, Faculty of Engineering, National University of Singapore, 9 Engineering Drive 1, Blk EA #05-34, Singapore 117576**

VISA/MSTR/AMEX: \_\_\_\_\_ Expiry Date: \_\_\_\_\_

Authorised Signature/ Company Stamp:

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