

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
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: 10 March 2010

The *Institution*
of *Structural*
Engineers

Two-Day Course on Design of Steel Structures To Eurocode3



Organiser : IES / IStructE Joint Committee
Date : 17 & 18 March 2010 (Wed & Thur)
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 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In March 2010, all fifty-seven structural design British Standards published by BSI will be withdrawn and replaced by the new suite of fifty-eight Structural Design Eurocodes and National Annexes.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 1993: Design of Steel Structures (Eurocode 3) will replace BS 5950 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 3 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
- EC0 and EC1: Actions and combinations of actions
- Introduction to and overview of EC3
- Structural analysis
 - *Second order effects, imperfections*
- Tension members
- Design rules
- Local buckling and cross-section classification
 - *Background, slenderness limits*
- Design of columns
 - *Background to design - perfect columns, Perry-Robertson*
 - *Column slenderness, buckling curves*
- Design of beams
 - *In-plane bending, shear, deflections*
 - *Lateral torsional buckling*
- Design of beam-columns
 - *Design approach, Interaction formulae*
 - *Columns in simple construction*
- Design of joints : *Bolted joints & Welded joints*

Course Book

A copy of the text book entitled "Designers' Guide to EN 1993-1-1: Eurocode 3: Design of Steel Structures". Authors: Gardner, L. and Nethercot, D. A, will be provided to all participants.

Target Audience

Civil & Structural Engineers, Designers and Contractors.

CV of Speakers



Roger Plank BSc, PhD, CEng, MICE, FStructE
Roger is a Chartered Structural Engineer and Senior Vice-President of the Institution of Structural Engineers. He was, until recently, the Corus Professor of Architecture & Structural Engineering at the University of Sheffield, with over 30 years experience of teaching, research and consultancy, principally in steel construction. He currently works as an independent consultant, providing specialist advice in the fields of fire engineering, structural design and sustainable construction. He has been project manager for four EU funded projects developing teaching material for Eurocodes 3 and 4.



Dr Leroy Gardner is a Senior Lecturer in Structural Engineering at Imperial College London and a Chartered Civil and Structural Engineer. He is engaged in teaching at both undergraduate and postgraduate level, specialist advisory work and leading an active research group. His principal research interests, in respect of which he has co-authored two textbooks and over 100 technical papers, lie in the areas of structural testing, numerical modelling and the development of design guidance for steel structures. In particular, through his involvement in European and other research projects, he has devised methods for designing with non-linear materials and has contributed to the formulation of design rules for Eurocode 3. Dr Gardner is a member of a number of Institution Panels and journal editorial boards.

REGISTRATION FORM

Design of Steel Structures to Eurocode 3

Wed, 17 & Thur, 18 March 2010

08.30am to 05.30pm, 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:
