2-Day Courses on Design of Bridges & High-Rise Buildings

**CBD: Comprehensive Bridge Design**
JHB: 03 & 04 Jul 2017: Protea Balalaika Sandton Hotel, 20 Maude Street, Sandton 2196
CPT: 06 & 07 Jul 2017: Southern Sun Newlands Hotel, Main Road, Newlands 7700
ECSA Validation Number: UCTCBDJHB17 / UCTCBDCPT17. Number of CPD credits: 2.0

**HRB: Design of Multi-Storey & High-Rise Buildings**
JHB: 11 & 12 Sep 2017: Protea Balalaika Sandton Hotel, 20 Maude Street, Sandton 2196
CPT: 14 & 15 Sep 2017: Southern Sun Newlands Hotel, Main Road, Newlands 7700
ECSA Validation Number: UCTHRBJHB17 / UCTHRBCPT17. Number of CPD credits: 2.0

Course Descriptions & Presenters

**CBD: Comprehensive Bridge Design**

This course will comprise a comprehensive treatment of bridge design, and cover both concrete and steel bridges, as well as steel-concrete composite construction. The course will begin with a description of various types of bridges and a treatment of conceptual design of bridges (including how to choose the right type of bridge), and cover loadings on bridges as well as general methods of bridge analysis. The detailed design of various types of concrete and steel bridges will be treated in depth. Considerations will extend to long-span bridges (cable-stayed and suspension) and construction methods for bridges. The course is intended for all Civil and Structural Engineers wishing to acquaint themselves with the principles of bridge design, and will also be beneficial to the more experienced bridge designers wishing to update themselves on latest developments in the field.

*Outcomes:* At the end of the course, participants will have a good understanding of the principles of bridge engineering, and be able to carry out conceptual design as well as detailed design of simple bridges. They will acquire a good appreciation of the challenges of designing long-span bridges such as suspension bridges and cable-stayed bridges.
Presenter

Chris Hendy (UK) is Head of Bridge Design and Technology at Atkins, one of the largest consulting engineering practices in the world. A world leader in bridge design, he provides technical leadership to over 750 bridge engineers worldwide, and has been involved in the design and strengthening of many complex bridges around the world, including the Dubai Metro Viaducts (Dubai), the New Medway Bridge (UK), the King Abdulaziz Airport Viaducts (Saudi Arabia), the Forth Road Bridge (UK), the Penang Bridge (Malaysia), and River Usk Footbridge (UK). Chris is Chairman of the UK’s Steel Bridge Group and is active on the BSI Bridge Committee B525/10. He is a Fellow of the Institution of Civil Engineers and a Fellow of the Royal Academy of Engineering of the UK. He has presented many courses and lectures on bridges in the UK and overseas, and has written three books on bridge design.

HRB: Design of Multi-Storey & High-Rise Buildings

This course will present a systematic approach to the design of multi-storey and high-rise buildings in concrete and steel, from conceptual design and coverage of various structural systems, to advanced structural analysis, computational modelling and simulation of structural behaviour, detailed design in concrete and steel, and construction considerations. Multi-storey buildings encompass low and medium-rise buildings from 3 up to 20 storeys in height. High-rise buildings will be defined here as multi-storey buildings that exceed 20 storeys in height, while tall buildings will be defined as those that reach or exceed 40 storeys. The course is intended not only for those with limited experience of multi-storey building design, but also for experienced engineers wishing to extend their skills and capabilities into the range of high-rise and tall-building construction.

Outcomes: At the end of the course, participants will have a good understanding of the principles of multi-storey building design, and be able to carry out conceptual design as well as detailed design of low to medium-rise buildings. They will gain a detailed appreciation of the challenges of designing high-rise buildings as well as tall buildings.

Presenters

Dr. Kourosh Kayvani (Australia) is currently the Global Director (Excellence & Expertise) of Aurecon, having previously held the position of Global Building Structures Leader of Aurecon. He has played a key role in the design of many innovative and award-winning structures, including major tall buildings and long span roofs globally. Some of the major tall building projects he has been involved with include: QNB Tower, Doha, Qatar (510m tall); 161 Castlereagh St, Sydney (180m tall); Brookfield Place, Perth (256m tall); Ocean 1 Tower, Pattaya, Thailand (92 stories); Etihad Tower 2, Abu Dhabi (90 stories); Landmark Towers, Hong Kong (40 stories); World Tower, Sydney (84 stories); Eureka Tower, Melbourne (90 stories); Westside Marina Towers, Dubai (45 stories); Civic Tower, Sydney (160m tall), and 363 George Street, Sydney (40 stories). Dr Kayvani is a Laureate of the IABSE Prize for his contribution to advanced structural analysis and innovative design of major structures worldwide. He was listed in “Engineers Australia Top 100 Most Influential Engineers” in 2009. He is a Fellow of the Institution of Engineers Australia, and a Visiting Professor at both the University of Sydney and the University of New South Wales.
Jon Carr (UK) has more than 25 years of structural design experience across the UK. He runs his own practice, and has been involved with the design of a wide range of multi-storey building projects in the educational, residential, commercial, retail and leisure sectors. He has won a number of awards for his work. He also holds a position at the University of Sheffield, where he is a Senior University Teacher responsible for the teaching of integrated project design and the design of multi-storey buildings. In 2012, he won the University of Sheffield Award for Excellence in Teaching.

Course Outlines

CBD: Comprehensive Bridge Design

- Introduction to Bridges; Types of Bridges
- Conceptual Design; Choosing the Right Type of Bridge
- Preliminary Calculations
- Loadings on Bridges
- Modelling and Bridge Analysis
- Design of Concrete Bridges
- Design of Steel Bridges
- Design of Steel-Concrete Composite Bridges
- Considerations for Long-Span Bridges
- Bridge Substructures & Foundations
- Detailing of Bridge Members
- Construction Methods for Bridges

HBD: Design of Multi-Storey & High-Rise Buildings

- Historical Development of High-Rise & Tall Buildings
- Introduction to Modern High-Rise Buildings: Office, Residential and Mixed-Use
- Conceptual Design of High-Rise Buildings & Tall Buildings
- Design Considerations for Multi-Storey Buildings
- Choice of Structural Form, Materials & Grids for Multi-Storey Buildings
- Preliminary Sizing of Beams, Slabs and Columns for Multi-Storey Buildings
- Determining Gravity Loads on Multi-Storey Buildings
- Bracing Systems for Steel Framed Multi-Storey Buildings
- Design of RC Shear Walls & Floor Slabs for Multi-Storey Buildings
- Wind Actions on High-Rise Buildings and Tall Buildings
- Seismic Actions on High-Rise Buildings and Tall Buildings
- Structural Analysis of High-Rise Buildings under Lateral Loads
- Special Design Considerations for Tall Buildings
- Construction Considerations for High-Rise & Tall Buildings

About the Convenor

Prof. A. Zingoni leads the Structural Engineering & Mechanics Group at the University of Cape Town. He holds MSc and PhD degrees in Structural Engineering from Imperial College London, is a Chartered Structural Engineer, a Fellow of the Institution of Structural Engineers (London), a Fellow of the International Association of Bridge & Structural Engineering (Zurich) and a Fellow of the South African Academy of Engineering. He has authored 4 books, edited another 6, and published over 100 scientific papers on various problems in structural engineering. He generally does research within the area of structural mechanics, with particular expertise on shell structures, vibration analysis and novel computational methods. He was recently inducted a
Fellow of the University of Cape Town in recognition of original distinguished academic work. He has founded the International Conference on Structural Engineering, Mechanics and Computation (SEMC), now held in Cape Town every 3 years, and takes keen interest in promoting the exchange of information between industry and academia.

**Registration**

The registration fee for each course is R7,850-00. This covers tuition by leading international speakers, comprehensive lecture notes (book + CD), lunches, teas, refreshments and a certificate of attendance on completion of a course. The certificate will show the number of CPD points awarded.

To book a place on the courses, the registration form (see Pages 5 & 6) must be completed and emailed or faxed back to the EBE Faculty via the contact details below. Submission via email is preferred (cc to the Convenor). The closing date for registration is **6 weeks** before the start of a course. However, the number of places on the courses is limited, and early registration is advised.

**Contact Details**

**For Registration Enquiries:**

Heidi Tait or Sandra Jemaar, CPD Unit  
Faculty of Engineering & the Built Environment  
University of Cape Town, Rondebosch 7701, Cape Town  
Emails: ebe-cpd@uct.ac.za; heidi.tait@uct.ac.za; sandra.jemaar@uct.ac.za  
Tel: 021 650 4922; Fax: 021 650 3082

**For General & Technical Enquiries**

Prof. A. Zingoni, PrEng, CEng, PhD, FSAAE, FIABSE, FIStructE  
Convenor: CPD Courses on Bridges & High-Rise Buildings  
Professor & Director: Structural Engineering & Mechanics Group  
Department of Civil Engineering, University of Cape Town  
Upper Campus, Rondebosch 7701, Cape Town, South Africa  
Tel: 021 650 2601; Email: alphose.zingoni@uct.ac.za

REGISTRATION FORM

Surname: 
Full names (as they appear on your ID): 
ID Number: 
Name of Company/Organisation: 
Gender (please tick): M F 
Disability (please tick): Yes No 
If yes, please specify: 
Postal address: 
Postal code: 
Email: 
Telephone: Cell: 

A. Choice of Courses: In the table below, please tick against the course(s) required. 

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<tr>
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<th>CBD: Comprehensive Bridge Design (2.0 CPD Credits)</th>
<th>HRB: Design of Multi-Storey &amp; High-Rise Buildings (2.0 CPD Credits)</th>
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<tbody>
<tr>
<td>Johannesburg</td>
<td>……. Mon 03 &amp; Tue 04 Jul 2017 (2 Days)</td>
<td>……. Mon 11 &amp; Tue 12 Sep 2017 (2 Days)</td>
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<tr>
<td>Cape Town</td>
<td>……. Thu 06 &amp; Fri 07 Jul 2017 (2 Days)</td>
<td>……. Thu 14 &amp; Fri 15 Sep 2017 (2 Days)</td>
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B. Registration Fees 
The registration fee is R7850-00 per course. This covers tuition by leading international speakers, comprehensive lecture notes (book + CD), lunches, teas, refreshments and a certificate of attendance on completion of a course. Registration for a course will only be confirmed upon receipt of payment.

C. Payment 
Please note: Bank account details are different for Direct Transfers and Invoiced Payments.

**Direct Transfer Payments** (payment information for delegates not requiring an invoice): 
Bank: Standard Bank 
Account name: UCT EBE CPD Program 
Branch and Code: Rondebosch 025009 
Account Number: 270 654 275 
*It is essential that you use your full name as a reference when making this payment.*

**Invoiced Payments**: If you require a tax invoice for a company payment please indicate this below. 

Tax Invoice required: Yes No 

If a tax invoice is required, you will be sent an SD004 form to complete. Please be aware that it takes about 3 weeks for the university to issue a tax invoice, and payment is expected on receipt of the invoice.

I am remitting the amount of R………………….. for attendance on ONE / TWO courses (underline the applicable) as indicated above.

Signature: ……………………………………… Date: ………………………………………

Please return the completed registration form and proof of payment (if you have not requested an invoice) via email to the EBE Faculty: ebe-cpd@uct.ac.za for the Attention of Heidi Tait, and copied to the Courses Convenor: Prof. A. Zingoni, Department of Civil Engineering: alphose.zingoni@uct.ac.za

Also sign and return Page 2 to accept the Terms and Conditions.
Terms and Conditions

1. On submission of this registration form, you will receive email confirmation that your registration form has been received. Please allow 3 days for this acknowledgement. If places have run out, you will receive notice of this and your name will go on a waiting list.

2. Closing date for registrations is **6 weeks** before the start of a course. However, the number of places on the courses is limited, and early registration is strongly advised. Please note that registration comprises (i) the submission of the completed registration form and (ii) the payment of the due registration fee. Registration will only be confirmed after full payment has been received. In the event that you are still awaiting an invoice, please supply a letter from your company stating their intention to pay the fee on receipt of the invoice.

3. Any cancellation must be notified in writing at least 6 weeks prior to the start of a course, **or the full fee will be charged**. If the fee has been paid and registration is cancelled not less than 6 weeks before the start of a course, an administrative fee of 15% of the full registration fee will be charged for the processing of the refund.

4. Registration may not be cancelled after the closing date for registrations. Any registered person who does not arrive for a course will be recorded as absent, and no refund will be payable.

5. If a registered delegate cannot attend a course, another person from the same organisation may attend in his or her place as a substitute, provided the substitution is notified at least 2 days before the course starts, and subject to approval by the Convenor.

6. A Certificate of Attendance will only be issued if payment has been received in full. The certificate will be issued in the name supplied on the registration form, and will reflect the number of CPD credits awarded for the course. Certificates will only be handed out at the end of the course. If a substitute attends the course in place of a registered delegate, the certificate will be issued to the substitute.

7. UCT reserves the right to take legal action to recover the full fees payable, and to recover the costs incurred as a result of such action.

8. UCT reserves the right to cancel a course if the number of registrations received is not sufficient to make the course viable. In such an event, any paid course registration fees will be refunded in full.

I have read and accept these terms and conditions

Signature: Date: