Jaap Wardenier  
Professor  
Faculty of Civil Engineering & Geosciences  
Delft University of Technology, The Netherlands  
&  
Choo Yoo Sang  
Assoc. Professor  
Centre for Offshore Research & Engineering  
Department of Civil Engineering  
National University of Singapore

**STATIC AND FATIGUE DESIGN FOR TUBULAR STRUCTURES**  
(21 PDUs)

*RE-RUN* BACK BY POPULAR DEMAND!!  
A comprehensive coverage on the various aspects of Tubular Structures by a world leading authority!

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15 – 17 March 2005

Organized by:  
- Professional Activities Centre, Faculty of Engineering  
- Centre for Offshore Research & Engineering, Faculty of Engineering  
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- Building & Construction Authority  
- Singapore Structural Steel Society
COURSE OVERVIEW
The short course will provide the participants with state-of-the-art knowledge on tubular structures. Tubular hollow sections are increasingly used in offshore structures, large-span roofs and multi-storey buildings due to their excellent properties and the associated advances in fabrication technology. The course will cover a wide range of topics, including guidance for strength and fatigue design for various types of connections. Recommendations from CIDECT, API and ISO will be highlighted and discussed. Advanced analysis techniques for frames and connections will also be introduced to provide a preview to integrated strength analysis of complex frames.

For technical enquiries, please contact:
Prof Y. S. Choo: cvecys@nus.edu.sg
Prof. J. Wardenier: J.Wardenier@CTG.TUDelft.NL

BRIEF COURSE OUTLINE
- Introduction
- Properties of Hollow Sections
- Applications
- Composite Construction
- Hollow Section Trusses
- Behaviour of Connections
- Welded Connections between Circular Hollow Sections
- Welded Connections between Rectangular Hollow Sections
- Welded Connections between Hollow Sections and Open Sections
- Welded I-beam to RHS Column Moment
- Connections
- Bolted Connections
- Fatigue Behaviour of Hollow Section Joints
- Nonlinear Finite Element Analysis for Connections and Frames
- Design Examples

Lecturer’s Credentials

Prof. Jaap Wardenier is currently with Delft University of Technology as a part-time Emeritus Professor of Steel Structures. He has written many design guides (some translated into many languages) and over 200 publications.

He is a recognised expert in many areas of tubular structures: static strength, fatigue strength, fabrication techniques and overall structural design. He has served as Chairman or member in many international and national committees on steel structures. In recognition of his significant achievements, Professor Wardenier has received many awards and honours which include: ISOPE Award; ISOPE Best Paper Award; ISOPE Osaka Award; Honorary Fellow of Singapore Structural Steel Society; Kurobane Lecturer and Kurobane Award of Sub-Commission XV-E - Tubular Structures of the International Institute of Welding, and Medal of Honour of the Netherlands Institute of Welding.

As an international authority in tubular structures, Professor Wardenier has been involved in many projects, including specialist consulting projects for Underwater Manifold Centre, Topsides for NAM-F3, Amoco-P15, Placid-K12, Maeslant Storm Surge Barrier, London Eye and many bridges. He has also contributed significantly in codes, standards, handbook and design criteria related to tubular structures.

Assoc. Prof. Choo Yoo Sang is currently with the Department of Civil Engineering and is Director of Centre for Offshore Research & Engineering in National University of Singapore. Dr Choo’s research interests include strength & fatigue capacity of tubular and plated structures, and knowledge-based system development for applications in the construction and offshore industries. Arising from the knowledge-based engineering system (H-LIFT) developed and R&D results generated, his research team has received the best paper award (Stanley Gray Award) from The Institute of Marine Engineering Science & Technology (UK) in 2001 and the Prestigious Engineering Achievement Award from the Institution of Engineers Singapore in 2003.

Dr Choo has served in many scientific and technical committees for international society and conferences, and two journals. He served in the Board of Directors, International Society of Offshore & Polar Engineers (ISOPE) during 2000-2002. He received two ISOPE Awards for his significant contributions towards the Society. He served as President of Singapore Structural Steel Society in 1992 to 1994, and is serving as member of International Institute of Welding Sub-Commission XV-E: Tubular Structures and ISO TC8/SC8/WG3. He received the Honorary Fellowship of Singapore Structural Steel Society in 2004. He has also provided specialist advice to some major offshore projects.
2 Ways to Register!

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

+65 6874 5097

REGISTRATION ENQUIRIES
Please contact Miss Lilian CHOONG for more information at
Tel: +65 6874 5113 / +65 6778 2314
Email: engcll@nus.edu.sg

FEE
Participants from Singapore: SGD945.00 (Inclusive of 5% GST)
Overseas participants: SGD900.00 (GST Exempted)

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10% (max.) discount is applicable to:
- Employees of the NUS Technology Associates registered with INTRO (Industry & Technology Relations Office);
- NUS Alumni;
- Employees of BCA / Members of SSSS
- Organization / Companies sending three or more participants;

REFUND & CANCELLATIONS
A 50% refund will be made for withdrawals (received in writings) 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.

Please register me: Static and Fatigue Design for Tubular Structures, 15 – 17 March 2005
Venue: National University of Singapore

Workshop Fee
Participants from Singapore: SGD945.00 (Inclusive of 5% GST)
Overseas participants: SGD900.00 (GST Exempted)

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