

Railway Operation Professional Training Course



Overview:

This is a 12-hour comprehensive railway operation training course for candidates who wish to become professional railway engineers in System Operation and Management with the understanding of railway design and safety. The training course is aimed to provide an in-depth appreciation on the key railway engineering systems being adopted in the modern world covering their fundamental working principles and railway system technologies including signaling, rolling stock and control & communication. The training course shall also include the topics on green transportation particularly regarding its impacts to the lifecycle costing and asset replacement for railway operation.

Course Outline:

- Key engineering systems for operating modern and sophisticated railway network (Rolling Stock [trains], Signaling, Traction Power, Communications and Control);
- Key engineering systems for managing an efficient and effective modern railway network - Risk Management, Hazard Management, System Assurance Management and Environmental Considerations to ensure sustainability for continuous development; and
- Key engineering systems for maintaining a first-class railway throughout its operating life – Lifecycle Costing, Technological upgrade, Asset Replacement and Customer Liaison Groups with the use of durable and environmental friendly components and systems.

Minimum Entrance Requirements:

The minimum entrance qualification is engineering or a professional qualification at corporate membership level in a railway engineering or equivalent related discipline plus at least one year of working experience in the discipline. Under very special circumstances, applicants with a Higher Diploma in a relevant discipline but with more than 3 years of relevant working experience will also be considered.

Certificate: All participants who have completed 100% attendance will get a full **CPD certificate** qualifying for total 12 hours.

Venue: Training Theatre, Level 3, Core F, Cyberport 3, Cyberport Road, Pok Fu Lam, Hong Kong

Program Session Dates:

Session 1: 09:00 – 12:00 and 13:00 – 16:00 on Saturday, 17 May 2014

Session 2: 09:00 – 12:00 and 13:00 – 16:00 on Saturday, 24 May 2014

Course Fee: HK\$6,000 - For non-membership / HK\$5,400 - For membership of supporting organizations

** We offer 5 enrollments with 1 free (@HK\$4800) registered at the same time and from the same organization



Organizer

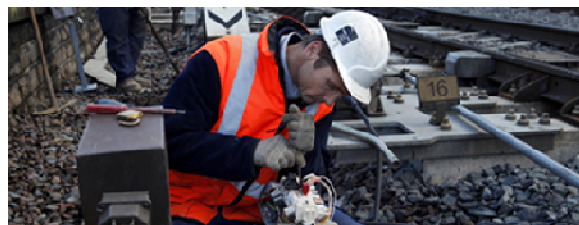
Co-Organizer

Venue Sponsor



Supporting Organizers

登記表格 REGISTRATION FORM



申請人資料 APPLICANT'S DETAILS

姓名 Name:

英文

English:

學會名稱(如有):

Name of

Association:

中文

Chinese:

會員編號:

Membership

No.:

聯絡資料 CONTACT INFORMATION:

住宅

Home:

電郵

E-Mail :

公司名稱 :

Company:

緊急聯絡人

E-contact :

申請人簽署:

Applicant

Signature:

手提

Mobile:

傳真

Fax :

職位 :

Position:

緊急聯絡電話

E-Call :

日期:

Date:

[參加表格連同人數紙電郵到 kcgrailtraining2014@gmail.com](mailto:kcgrailtraining2014@gmail.com)

賬戶號碼 - 香港上海滙豐銀行有限公司 - "078-457652-838" KCG Corporation Limited

Registration form & Deposit Slip Email to: : kcgrailtraining2014@gmail.com

Account No. - HSBC - "078-457652-838" KCG Corporation Limited

(收到人數紙後, 才可確實留座 (Confirmation of seat after receipt of the bank-in-slip / payment))

PLEASE RETURN THIS APPLICATION FORM TO: KCG Corporation Limited

聯絡人 Contact Person: Ms Connie Mui / SOE or Ms. Christine Li / KCG Corporation Ltd.

電話 Tel: 26170311 (SOE)/ 96506219 (KCG) 電郵 Email: kcgrailtraining2014@gmail.com

傳真 Fax: 81018633

Railway Operation Professional Training Course

Program Rundown: (Tentative)

Venue: Training Theatre, Level 3, Core F, Cyberport 3, Cyberport Road, Pok Fu Lam, Hong Kong

Day 1 – 17 May 2014

08:45 Registration
09:00 Training Session
10:30 Tea Break
10:40 Training Session
12:00 Lunch
13:00 Training Session
14:30 Tea Break
14:40 Training Session
16:00 Day 1 Training ended

Day 2 – 24 May 2014

08:45 Registration
09:00 Training Session
10:30 Tea Break
10:40 Training Session
12:00 Lunch
13:00 Training Session
14:30 Tea Break
14:40 Training Session
16:00 Day 2 Training ended, followed by photo taking and award of CPD certificates.

Note: Refreshments and lunch will be provided by the organizer.

Key Topics

1. Types of Rolling Stock
2. Key subsystems of Rolling Stock
3. Future Trend and Development of Rolling Stock
4. Types of Signaling Systems – Fixed Block vs Moving Block systems
5. Introduction to principles of Communication Based Train Control (CBTC) system for railway signaling
6. European Rail Traffic Management / European Train Control System (ERTMS/ETCS) and Chinese Train Control System (CTCS)
7. Signaling System for High Speed Railway
8. Requirements for Traction Power Systems
9. Track Electrification Considerations
10. Types of Traction Power Supply Systems

11. Types of Communications subsystems for Railway Operation
12. Functionalities of Railway Control System
13. General System Architecture and Technologies employed for Railway Control
14. Operations Control Center (OCC) and its functionalities
15. Railway Safety Management and Lifecycle
16. System Assurance Framework and process
17. Risk Management Process and tools
18. Hazard Management Process
19. Environmental Considerations
20. Lifecycle Costing Consideration for Railway Projects
21. Technological Advancement in Railway Operation – pros and cons
22. Railway Asset Management Process – repair, replace and upgrade
23. Customer Expectation Management for Railway Operation

At the end of the training, the trainees are expected to have an understanding and appreciation of :

1. the different types of rolling stock for different railway operation (High Speed Rail, Intercity services, Metro system, Light Rail, Monorail)
2. the key subsystems and components of major E&M Systems for railway including trains, signaling, communications, control and traction power
3. the concept of the adoption of system assurance, risk management, hazard management and safety management processes to design, implement and operate a modern railway network
4. the importance of considerations on environment in designing, implementing and operating a railway network
5. the principle and application of Lifecycle Costing for railway network that would impact the way the railway is constructed
6. the approaches to be adopted on Asset Management for a railway network throughout its lifecycle particularly when technologies are advancing at a speed that is beyond imagination
7. the importance of involvement of stakeholders in railway operation throughout its whole lifecycle

Speakers' Profile

Ir Dr Yip Wai TUNG

Education/Qualifications

- Doctor of Philosophy (Ph.D), Department of Computing, The Hong Kong Polytechnic University.
- Master of Science (Engineering) with Distinction, The University of Hong Kong.
- Bachelor of Science (Honors) in Computer & Information System, The University of London, UK.
- Chartered Engineer (CEng)
- Member of Institution of Engineering and Technology (MIET)
- Member of Hong Kong Institution of Engineers (MHKIE)

Key Profile

YW is a professional system engineer with over twenty-five years of experience in the railway and hydro-electric utility industry, working from operations engineering, training to major construction projects in the Hong Kong, Taiwan, Canada and Asia Pacific Region.

YW's technical skills include the management of the whole project lifecycle for mainline and mass transit railway systems. Recent achievements included the commissioning of the Integrated Control and Communications System for two major railway extension projects in Hong Kong; and the design of the Circle Line Project (Phase 1) of the Taipei Rapid Transit System in Taiwan.

YW's professional experience also includes analyzing, designing, installing, test and commissioning of large scale control (SCADA) and communications system for rail applications, as well as project planning, monitoring and controlling. Familiar with industrial system development methodologies, software assurance standard (e.g. EN50128), system safety management process and safety analysis techniques (such as Interface Hazard Analysis (IHA), FEMCA & HAZOP).

In addition to project and professional experience, YW has also conducted applied research in the areas of human-computer interaction, usability study, human factors in control room environment, requirements engineering and system development methodologies.

Professional Services

Member of the Training Review Sub-Committee (Group III), the Hong Kong Institution of Engineers

Subject Expert on Main Control System and Communication System for Shenzhen Construction Bureau, People Republic of China

Professional & Academic Publication

- Tung, Y.W. et. al. (2007). Human-computer interaction for train-fire scenarios – LMC Spur Line Project (Hong Kong). 1st International Tunnel Safety Forum for Road and Rail, 23-25 April 2007, Nice, France.
- Tung, Y.W. and Leung, C.M. (2007). Integrated Rail Control System – Whence and Whither? Railway Engineering 2007, 20-21 June 2007, London, United Kingdom.
- Tung, Y.W. (2008). Decision-support Tool for Tunnel Train-fire Scenarios MTRC Lok Ma Chau (LMC) Spur Line (Hong Kong). The ICRE 2008 – International Conference on Railway Engineering, March 25-28, 2008, Hong Kong.
- Tung, Y.W. and Keith C.C. Chan (2010). A Unified Human-computer Interaction Requirements Analysis Framework for Complex Socio-technical Systems. International Journal of Human-Computer Interaction, 26(1), 1-21, 2010.

Ir C.S. Chang

Education/Qualifications

Bachelor of Science (Engineering)

Master of Business Administration (MBA)

Chartered Engineer (CEng)

Registered Professional Engineers (CAI, Information, Electronics)

Fellow of Institution of Engineering and Technology (FIET)

Fellow of Hong Kong Institution of Engineers (FHKIE)

Member of the Institute of Railway Signal Engineers (MIRSE)

Key Profile

CS is a professional railway system engineer with 30 years of international project experience. CS possesses a wealth of knowledge and experience in the design, installation, testing and commissioning of multi-disciplinary and sophisticated railway systems as well as in the project management of mega size railway projects. Moreover, CS is instrumental in conducting critical reviews on train operation of mass transit railway and light rail with an aim to assess the ergonomic design and technical robustness for both new and existing railways. CS's career in railway engineering has been diversified, leading to involvement in different areas of railway systems engineering and project development.

CS has abundant experience in the control system applications for railway operation and he has extensive experience in managing SCADA based control / management system works ranging from building management system (BMS) in stations, depots and control rooms to operational critical control on signalling, traction power and tunnel ventilation. He has proven experience in contract / project management covering the whole project lifecycle from tender formulation and evaluation, contractor management, testing & commissioning and system handover. His systematic approach on system interface management is one of the key attributes to the success of the implementation of such systems in the recent projects in Hong Kong and overseas.

CS has written and presented over 30 papers in various international conferences on system engineering, system interface management and system integration on SCADA system

applications for railway and he was the Past Chairman of the Control, Automation and Instrumentation Division of Hong Kong Institution of Engineers and Past Chairman of the Institution of Electrical Engineers Hong Kong Branch.

Community / Professional Services

- 1 **Member** of the School Board of Lock Tao Kindergarten
- 2 **Director & Hon Treasurer** of the Lock Tao Christian Association
- 3 **Past Chairman** of CAI Division of HKIE
- 4 **Past Chairman** of Institution of Electrical Engineers (now renamed to IET)
- 5 **Ordinary Member** of Council of IET, UK (2006-2009, 2010-2011)
- 6 **Past Chairman** of the Communities Committee – Asia Pacific of IET, UK (2009-2012)
- 7 **Member** of the Advisory Committee on Mechanical & Automation Engineering of Chinese University of HK
- 8 **Subject Expert** on Railway Signaling, Control, Communication, AFC for Shenzhen Construction Bureau, China (2002-2008)
- 9 **Part Time Lecturer** on Railway Engineering Module for an MSc Course in the Chinese University of Hong Kong, Hong
- 10 **Director** of Heartstring Foundation

Ir Henry Cheung

Education/Qualifications

Bachelor of Applied Science (BASc)
Master of Business Administration (MBA)
Chartered Engineer (CEng)
Registered Professional Engineers (CAI, Electronics)
Professional Engineer (PEng)
Fellow of the Institution of Engineering and Technology (FIET)
Fellow of the Hong Kong Institution of Engineers (FHKIE)
Fellow of the Institution of Railway Signal Engineers (FIRSE)
Senior Member of the Institute of Electrical and Electronics Engineers (SrMIEEE)

Key Profile

Henry has extensive experience in the railway engineering industry, serving in various capacities and has delivered railway systems around the world. Most notably is his contribution to the Hong Kong mainline and metro when he was the manager in charge of the signal and telecommunication systems.

He has over 27 years experience as an engineer; he is renowned in the local engineering community and global railway industry. He has served in various positions in many professional institutions and has lectured in post-graduate level railway engineering courses.

Community / Professional Services

1. **Member of the Telecommunications Numbering Advisory Committee**, Office of the Telecommunications Authority, the Government of the Hong Kong Special Administrative Region, 2008 - 2012
2. **Member of the Engineering, Telecommunications and Broadcasting Expert Group** to Legislative Councillor, the Hong Kong Special Administrative Region, 2008 – 2012
3. **Chairman**, the Institution of Engineering and Technology Hong Kong, 2007 – 2008
4. **Electronics Discipline Advisory Panel Member**, the Hong Kong Institution of Engineers, 2009 – current
5. **Vice Chairman**, Electronics Division, the Hong Kong Institution of Engineers, 2012 – current
6. **Committee Member**, the Information Technology Joint Council, 2008 – current

7. **Committee Member**, the Institution of Railway Signal Engineers Hong Kong Branch, 1998 – current
8. **Mentor to Students**, the British Computer Society Hong Kong Branch, 2007 – current
9. **Part time Lecturer**, Department of Mechanical and Automation Engineering, the Chinese University of Hong Kong, 2012 – current

Publications

1. Sustainable Railway, the management and optimization of traction energy consumption, H Cheung, 2010, Railway Signalling and Control System, the IET
2. A WiFi-based CCTV system on metro trains, 2008, Future CCTV conference, Singapore
3. From 4-Aspect Signals to Automatic Train Operation, Managing Railway Operations and Maintenance: Best Practices from KCRC, University of Birmingham and A & N Harris, 2007
4. Communication based signalling, H Cheung, R Hirsch, Managing Railway Operations and Maintenance: Best Practices from KCRC, University of Birmingham and A & N Harris, 2007
5. Achieving Win-Win Result in Mega Project Delivery with Suppliers through a different “Partnering” Approach, CS Chang, H Cheung, 2006, Comrail, WIT Press
6. The Immunity of a Signal System under 25kV AC Traction, H Cheung, 2006, the HKIE Journal
7. Performance-based Specifications for Railway Control Systems, the West Rail Experience, P Robins, H Cheung, 1999, the IRSE Aspect 99