

CPD Series: Railway Signal Control and Communications

Lecture: 1 August – 12 September 2026 (09:00 am - 12:00 pm, 1:30 pm - 4:30 pm) &

Examination: 19 September 2026 (09:00 am – 11:00 am) (Saturdays)

Course Code: SC 26-021

Co-organized with IRSE (Hong Kong Section)

Objectives and Learning Outcomes

Signalling system is very important for safe operation of railway. The course is designed to provide participants with practical understanding of the railway signalling principles; headway calculation for a typical signalling layout, control tables' input and the station communications.

Upon completion of this course, participants will be able to:

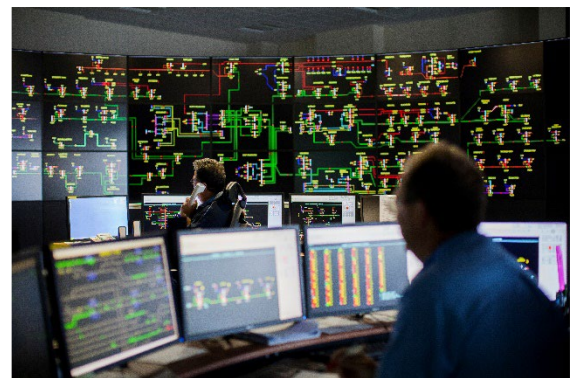
- Evaluate the signalling principles and apply them in practical systems;
- Evaluate headway calculation and understand the railway safety and RAMS; and
- Compile a control table for a given layout according to interlocking requirements.

Who Should Attend

- Practitioners in railway industry who wish to refresh and upgrade their knowledge in the railway signalling and communications areas
- Graduate Engineers who wish to develop a career in railway industry
- Potential candidates sitting for IRSE Professional Examination
- Engineering students who are interested in railway signalling

Language

Lectures will be conducted in Cantonese and supplemented by English terminology and terms. Course materials, including examination, are written in English.



Venue

MTR Academy- Hung Hom Centre

Mode of Learning

Classroom lecture

Course Structure

The programme comprises 6 main parts:

- Signalling principles and their applications
- Railway infrastructure and safety protection
- Signalling trackside equipment and safety design
- Station communications and radio
- RAMS, SPAD, WSF
- Train operation, headway calculation and Control Tables

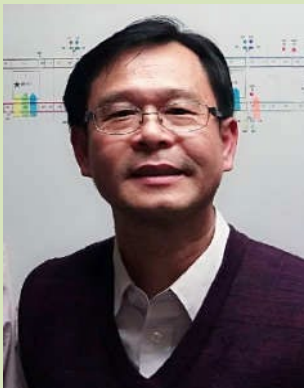
Professional Speakers



Ir Henry Cheung
FIRSE RPE(CAI. ENS) FHKIE,
CEng FIET SMIEEE

Ir Henry Cheung has extensive experience in the railway and lift & escalator engineering industry, serving in various capacities as clients, owner's representative consultant, contractor, and government advisor, and has delivered systems around the world, especially in Hong Kong, South East Asia and Australia. Most notably is his contribution to the Hong Kong mainline and metro development. His most recent contribution being a member of the Steering Committee for the development of Hong Kong Railway Standard.

Henry has 40 years' experience as an engineer and manager; his is renowned in the local engineering community and global railway industry. He has served in various positions in many professional institutions and governmental advisory boards and has lectured in post-graduate level railway engineering courses.



Ir. Y. T. Tai, FIRSE
Chairman of IRSE (HK)

Ir. Timothy Y. T. Tai (Tim) is a professional signal engineer with over 40 years of experience in maintenance, implementation, design; test and commissioning of relay interlocking, Computer Based Interlocking, Automatic Train Control and Communications-based Train Control (CBTC) systems. He is currently employed as a consultant for the New ATC Replacement Project for the Urban Lines in HK. Prior to this post, he was the Signalling & Electronic Control Engineering Manager tasked with the responsibility of design, implementation, test & commissioning of modification for the Signalling & Electronic Control system in Operating Railway and the on-coming new line interfacing systems.

Tim was a Visiting Lecturer in the Hong Kong Polytechnic University, teaching Signalling and Train Control Systems in MSc course in year 2009, 2013 and 2019. Tim was also a visiting lecturer for MTR Academy from 2017 to 2025. Through these period, Tim conducted Fundamentals of Railway Signalling & Train Control course, Intermediate Railway Signalling course, Railway Signal Control & Communications course and Signalling Control Table Design & Test Knowledge course.



Mr. K. L. Tsang

Mr. K. L. Tsang has over 30 years' experience in the railway industry involved in design, installation, T&C, first line and second line maintenance of S&T works. His last post in the MTR was the S&T Maintenance Manager assigned for the Hangzhou Line1 Project in Hangzhou, China. K. L. was a competence assessor approved by IRSE to undertake competence assessments for the licensing categories of design, installation, testing and maintenance works.



Mr. Y. F. Sung, Hon, FIRSE

Mr. Y. F. Sung is a retired professional signal engineer with over 32 years of experience in maintenance, installation, design, T&C of railway signaling system. His last job position was the Signal Maintenance Manager in KCRC, responsible for the first line and second line maintenance of East Rail, West Rail, Ma On Shan Rail and Light Rail.

Mr. Sung was a Visiting Lecturer of VTC, teaching Railway Signalling in the year of 2006, 2008, 2010 and 2014. Mr. Sung was also a visiting lecturer in MTR Academy, teaching Intermediate Railway Signalling course and Basic Railway Signalling course from 2018 to 2024.

He is the General Secretary of IRSE (HK Section).

Schedule

Time & Date	Lesson	Topics	Speakers
1 August 2026 <u>09:00 am – 12:00 pm</u> & <u>1:30 pm - 4:30 pm</u>	1	Railway Infrastructure and Safety Protection <ol style="list-style-type: none"> i. British Railway History ii. Rolling Stock iii. High Voltage and Overhead Line iv. Permanent Way and Works v. Signalling <ul style="list-style-type: none"> — Fouling point and Clearance point 	Mr. YF Sung
	2	Signalling Principles <ol style="list-style-type: none"> i. Signalling Standard Principles ii. Signalling Principles for Interlocking Design 	Mr. YF Sung
8 August 2026 <u>09:00 am – 12:00 pm</u> & <u>1:30 pm - 4:30 pm</u> 15 August 2026 <u>09:00 am – 12:00 pm</u>	3, 4 & 5	Trackside Equipment and Safety Design <ol style="list-style-type: none"> i. Point Machines ii. Train Detections, Axle counter iii. Signals and Indicators iv. Automatic Warning System (AWS) v. Safety Relays <ul style="list-style-type: none"> — Pin code vi. Level-Crossing Equipment <ul style="list-style-type: none"> — Half barrier LX — Full Barrier LX vii. Trackside Installation 	Mr. KL Tsang
29 August 2026* <u>*09:00 am – 12:30 pm</u> & <u>1:30 pm - 4:30 pm</u>	6 & 7	RAMS <ol style="list-style-type: none"> i. Description of RAMS ii. Fail Safe Concept iii. Human Errors, SPAD and WSF iv. Train Accidents v. Accidents and Investigation vi. Rule and regulation 	Ir. Henry Cheung
5 September 2026* <u>*09:00 am – 12:30 pm</u>	8	Communications <ol style="list-style-type: none"> i. PABX, PAX, SPT, Direct line and Help point ii. CCTV, PA System and PIDS iii. Transmission lines, copper and optical cable iv. Data Network Communications v. Train Radio 	Ir. Henry Cheung
12 September 2026 <u>09:00 am – 12:00 pm</u> & <u>1:30 pm - 4:30 pm</u>	9 & 10	Control Table <ol style="list-style-type: none"> i. Train Operation, Headway Calculation, Block Instrument ii. Single Line Working and Bi-directional Line lii. Organizations and drafting Route Control Table, Point Control Table and Signal Control Table iv. Control Table exercise and practice v. Case study: past examination questions of control table 	Mr. YT Tai
19 September 2026 <u>09:00 am – 11:00 am</u>	11	Module Examination	Mr. YF Sung & Mr. YT Tai

Certificate of Attainment

Signed jointly by MTR Academy and the Hong Kong Section of Institution of Railway Signal Engineers, a Certificate of Attainment will be issued to each participant if he/she passes the final assessment AND satisfies a minimum attendance requirement of 70% in the course.

This training course is recognized for 150 CPD points by the Chartered Institute of Logistics and Transport in Hong Kong (CILTHK).

Programme Fee	Early Bird Fee	Discount Scheme
\$7,900	\$7,110 (Paid registration on or before 19 July 2026) <i>^Rounded up fee</i>	15% off for <ul style="list-style-type: none">– members of supporting professional bodies[^]– full time staff of MTR and its subsidiary companies[^]– full-time students (Senior Secondary or above) [^] Latest details, please refer to our webpage

Application Methods

Online

Applicants can enrol and pay online by credit card at <https://www.mtracademy.com>

Enquiry in Person

Address: 1/F, MTR Hung Hom Building, 8 Cheong Wan Road, Hung Hom, Kowloon

Opening hours: Monday – Friday 9am – 8pm; Saturday: 9am – 12:30pm

Closed on Sundays and Public Holidays

Closing Date for Registration

Please note that due to limitations of venue capacity and relevant logistics, all registrations must be made at least 2 working days prior to the delivery date of individual modules. **No walk-in registration will be entertained.**

*MTR Academy reserves the right to turn away successfully enrolled individuals who do not meet prerequisite.