

CPD Series: Fundamentals of Railway Signalling and Train Control

Lecture: 2 May 2026, 9:00 am - 12:00 pm &

9 May 2026, 9:00 am - 12:00 pm ; 1:30 pm - 4:30 pm (Saturdays)

Course Code: SC 26-011

Co-organized with IRSE (Hong Kong Section)

Objectives and Learning Outcomes

The course is designed to provide participants with a practical understanding of railway signalling with an introduction of evolution of railway signalling from semaphore signalling system to computer-based signalling system and associated signalling trackside equipment.

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

- Understand the signalling principles and aware of trackside safety;
- Understand train operation and various type of railway signalling systems; and
- Evaluate headway time and distance.

Who Should Attend

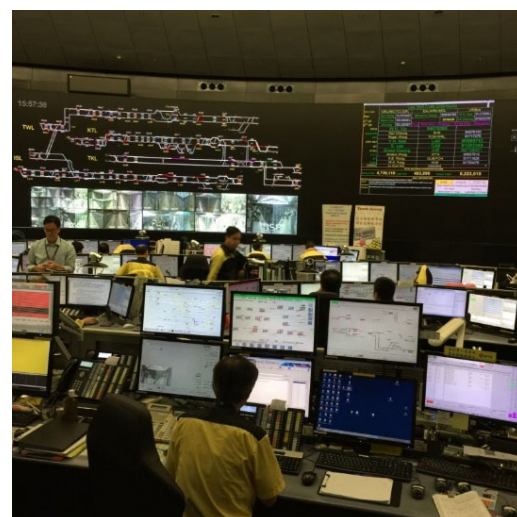
- Practitioners in railway industry who wish to learn fundamental knowledge in the railway signalling
- Graduate Engineers who wish to broaden their knowledge
- Engineering students who are interested in railway signalling
- Candidates who wish to attend the IRSE Professional Examination Module A

Language

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

Venue

MTR Academy - Hung Hom Centre



Mode of Learning

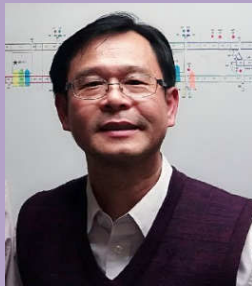
Classroom lecture

Course Structure

The course covers the following fundamental railway signalling topics:

- Signalling principles and trackside safety
- Railway infrastructure and trackside equipment
- Train operation and headway
- Latest developments in signalling system

Professional Speakers



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

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 2024. For the years of 2019 and 2020, he conducted Intermediate Railway Signalling course. He also provided tutorials to the examiners in the UK annual IRSE examination in the past.



Mr Stephen C. C. Chan
MIEAust CPEng, MIRSE

Stephen C. C. CHAN is a professional electronic engineer with engineering competency in Electronic Engineering and Railway Signalling specializations. He started his professional development in railway signalling in early 2000 and completed the IRSE professional examination in 2017.

Stephen has served in several engineer capacities before taking a full-time Lecturer post in a local tertiary institution. His teaching areas included Digital Design, Opto-electronics, Railway Signalling and Communications, Object Oriented Programming and Electrical Installations.

Schedule

Time & Date	Lesson	Topics	Speakers
2 May 2026 9:00 am - 12:00 pm	1	Introduction to the history, principles and function - Railway Signalling History; - Railway Infrastructure and Protection Safety; - Signalling Principles – The Requirements; - Typical Items (Deadman Switch, Detonator, Fouling point and Clearance point).	Mr Stephen Chan
9 May 2026 9:00 am - 12:00 pm	2	Technologies for train detection and communication - Evolution of Railway Signalling System (Token/Mechanical/Color Light/Speed Code); - Automatic Train Protection (ATP), Automatic Train Operation (ATO), Automatic Train Supervision System (ATSS); - Intermittent and Continuous ATP System; - Different Types of Train Detection Systems.	Ir Tai Yin Tung
9 May 2026 1:30 pm - 4:30 pm	3	Signalling Operations - Headway Time and Headway Distance; - Fixed Block and Moving Block Signalling; - European Train Control System (ETCS) and Chinese Train Control System (CTCS); - Grades of Automation (GoA); - Safety Integrity Level (SIL) of Rail System; - Train to Train Communications.	Ir Tai Yin Tung

Certificate of Attendance

Each participant will receive a certificate of attendance signed jointly by MTR Academy and the Hong Kong Section of Institution of Railway Signal Engineers, showing 9 hours upon successful completion of this course.

This course is recognized for 45 CPD points by the Chartered Institute of Logistics and Transport in Hong Kong (CILTHK).

Programme Fee	Early Bird Fee	Discount Scheme
\$3,100	\$2,790 (Paid registration on or before 19 April 2026)	15% off for – members of supporting professional bodies ^ – full time staff of MTRCL 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.