

Basic Signalling

Course Code: SC 18 - 009

2 Mar 2018 - 11 May 2018 (Fridays), 07:00p.m. – 10:00p.m.

Exam on 25 May 2018 (Friday), 07:00p.m. – 08:30p.m.

Introduction

Signalling system is very important for safe operation of railway. This course introduces the signalling equipment, signalling principles and their applications, safety protection systems, headway and its calculation.

Programme Objectives

The course is designed to provide participants practical understanding of railway operations and a systematic introduction to the railway signalling principles. The signalling principles and associated equipment will be introduced.

Learning Outcomes

Upon completion of this course, participants are able to:

1. Identify the functions and operations of typical trackside signalling equipment;
2. Evaluate the signalling principles and apply them in practical systems;
3. Evaluate system performance by means of headway calculation.

Who Should Attend

- (i) Engineering professionals like signal technicians, supervisors, who wish to acquire a systematic concept of the railway operations and signalling systems;
- (ii) Practitioners in railway industry who wish to refresh and upgrade their knowledge in the railway signalling areas; or
- (iii) Graduate engineers who wish to develop a career in railway industry

Language

Lectures will be conducted in Cantonese and supplemented by English for technical terms. Course materials, including exam, are written in English.

Venue

MTR Academy - Hung Hom Centre,
Kowloon, Hong Kong

Mode of Learning

Classroom lecture

Programme Structure

The programme comprises 3 main parts:

1. Trackside signalling equipment
2. Signalling principles and their applications
3. Headway and train operations

Lecturer



Mr. Y T Tai, MIRSE

Timothy Y.T. Tai (Tim) is a professional signal engineer with over 35 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 the Signalling & Electronic Control Engineering Manager in Hong Kong MTR Corporation Ltd (MTRCL).

Tim was a Visiting Lecturer in the Hong Kong Polytechnic University, teaching Signalling and Train Control Systems in MSc course in year 2009 and 2013. He is also an active Executive Member of IRSE (HK Section) to provide tutorials for the examinees for the UK annual IRSE examination.



Mr. K P Leung, MIRSE

K.P. Leung works for Wabtech Control System Pty Ltd as a Interface and Installation Engineer. He is responsible for the T&C of Train Simulation System, MCS and Telecommunications System. He was with MTRCL for 22 years. The last job was Support Engineer in T&ES Department.

Mr. Leung was a Visiting Lecturer of VTC, teaching Railway Signalling in 2014. He is a Committee Member of IRSE (HK Section).



Mr. C P Lung, FIRSE

Charles C.P. Lung is a retired professional signal consultant with over 32 years experience in maintenance, project, design, T&C of railway signalling system.

Mr. Lung was a Visiting Lecturer of VTC, teaching Railway Signalling in the year of 2006, 2008, 2010 and 2014 . He is a Committee Member of IRSE(HK Section).



Mr. Y F Sung, FIRSE

Y.F. Sung is a retired professional signal engineer with over 32 years experience in maintenance, installation , design, T&C of railway signalling system. The last job was the Signal Maintenance Manager in KCRC.

Mr. Sung was a Visiting Lecturer of VTC, teaching Railway Signalling in the year of 2006, 2008, 2010 and 2014. He is the General Secretary of IRSE(HK Section).

Basic Signalling Course Time-table

Lesson	Topics	Lecturer	Time & Date
1	Railway Infrastructure Brief on Railway Industries i. Permanent Way ii. Overhead Lines Equipment iii. Rolling Stock iv. Signalling	YF Sung	07:00 p.m. – 10:00 p.m. 2 Mar 2018 (Friday)
2 & 3	Signalling Equipment i. Point machine ii. Train detection iii. Signal indicators iv. Safety relay v. Axle counter	KP Leung	07:00 p.m. – 10:00 p.m. 9 & 16 Mar 2018 (Fridays)
4 & 5	Signalling Principles i. Signalling Principle ii. Standard Signalling Principles	YF Sung	07:00 p.m. – 10:00 p.m. 23 Mar & 6 Apr 2018 (Fridays)
6 & 7	Train Operation i. Headway ii. Headway calculation iii. Fixed block, Block instrument iv. Signal aspects v. Aspect sequence vi. Single line operation vii. Bi-direction line, Multi-line	CP Lung	07:00 p.m. – 10:00 p.m. 13 & 20 Apr 2018 (Fridays)
8 & 9	Fixed Block Systems i. Automatic Warning System, AWS ii. Human errors iii. SPAD iv. Fail safe concept v. Clampham Junction	YT Tai	07:00 p.m. – 10:00 p.m. 27 Apr & 4 May 2018 (Fridays)
10	Signalling the layout i. Signalling terms, Symbols ii. Signal scheme legend iii. Simple signalling the layout	YT Tai	07:00 p.m. – 10:00 p.m. 11 May 2018 (Friday)
11	Module Examination		07:00 p.m. – 8:30 p.m. 25 May 2018 (Friday)

Certificate of Attainment

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

Programme Fee	Early Bird Fee	Discount Scheme
\$7,000	\$6,300 (Paid registration on or before 15 Feb 2018)	15% off for – members of supporting professional bodies * – full time staff of MTRCL and its subsidiary companies (Ngong Ping 360, Octopus and TraxComm)

* Supporting professional bodies are: Hong Kong Institution of Engineers (HKIE), The Institution of Engineering and Technology (IET), Society of Operations Engineers (SOE), China Hong Kong Railway Institution (CHKRI), Hong Kong Quality Management Association (HKQMA), Six Sigma Institute (SSI), Knowledge Management Development Centre (KMDC), Hong Kong Institute of Environmentalists, Literati Academy of Greater China (Lagreach), The Hong Kong Institution of Engineering Surveyors (HKIES) and The Institution of Railway Signal Engineers (IRSE).

Application Methods

Online

Applicants can enrol and pay online <https://www.mtracademy.com>

Enquiry in Person

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

Opening hours: Mon, Wed and Thu: 1:30pm – 2:30pm; 3:30pm – 7:30pm; Saturday: 9:30am – 12:30pm

Closed on Sunday and Public Holiday

Payment methods

By credit card online

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.**