香港學術及職業資歷評審局
Hong Kong Council for Accreditation of
Academic & Vocational Qualifications

SUMMARY ACCREDITATION REPORT

MTR Academy (HK) Company Limited

Initial Evaluation and
Learning Programme Accreditation

Advanced Diploma in Railway Engineering

November 2016

This accreditation report is issued by the Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) in its capacity as the Accreditation Authority as provided for under the Accreditation of Academic and Vocational Qualifications Ordinance (Cap 592) (AAVQO). This report outlines the HKCAAVQ's determination, the validity period of the determination as well as any conditions or restrictions on the determination.

1. Introduction

1.1 MTR Academy (HK) Company Limited is a fully-owned subsidiary of the MTR Corporation Limited (MTRCL). Established in June 2016, the MTR Academy (HK) Company Limited aims to serve as a platform to transfer knowledge and experience of MTRCL on railway operation and management. It plans to provide railway-related accredited programmes and professional courses to people in Hong Kong and overseas.

1.2 Based on the Service Agreement, HKCAAVQ was commissioned by the MTR Academy (HK) Company Limited（港鐵學院（香港）有限公司） (the Operator) to conduct an Initial Evaluation (IE) to ascertain and determine whether the Operator is competent to achieve its stated objectives and to operate learning programmes meeting Qualifications Framework (QF) standards at QF Levels 1 to 4, and to conduct a Learning Programme Accreditation to assess and determine whether the Advanced Diploma in Railway Engineering achieves the stated objectives and meets the QF standard at the QF Level 4.

1.3 The accreditation exercise was conducted according to the relevant accreditation guidelines referred to in the Service Agreement and the Terms of Reference stated therein. A site visit took place on 15 September 2016.

2. HKCAAVQ's Accreditation Determination

Having due consideration of the accreditation panel's observations and comments as presented in this Report, HKCAAVQ makes the following accreditation determination:

2.1 **Initial Evaluation**

☑ Approval

Name of Operator	MTR Academy (HK) Company Limited 港鐵學院（香港）有限公司
Address of Operator	43/F, Manhattan Place, 23 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong 香港九龍九龍灣宏泰道 23 號 Manhattan Place 43 樓
Highest QF Level of programme(s) which the Operator can operate upon successful learning programme	Level 4

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accreditation	
Start date of 2-year validity period of Initial Evaluation (IE) accreditation status	3 January 2017
Scope of IE Accreditation Status	For local programmes operating in Hong Kong

Recommendations
1. The Operator should review the appropriateness of appointing the Quality Assurance Officer as Chairperson of the Quality Assurance Board (QAB) so as to ensure that the QAB can perform its functions with more effective checks and balances as well as segregation of duties in relation to the development, implementation and review of quality assurance policies. 2. The Operator should ensure that the staff development activities for the teaching staff cover the following contents sufficiently so that the teaching staff can be equipped with the knowledge and skills required for the quality delivery of the programme: (i) Class management skills; (ii) Teaching methodologies and skills; (iii) Recent development of the industry within and beyond Hong Kong, and latest technical knowledge and skills; and (iv) Understanding of QF levels and standards. 3. The Operator should ensure the staff appraisal form includes items to specifically evaluate the teaching performance of the teaching staff so as to ensure that the teaching performance can be acknowledged and monitored effectively. 4. The Dean of the Operator, who also serves as the Head of Operations Training Department of the Operator's parent company, MTRCL, should monitor closely the total workload of the teaching staff with operational and teaching responsibilities to ensure staff are not overloaded with an adverse effect on the quality of teaching.

2.2 Learning Programme Accreditation

☑ Approval

Name of Operator(s)	MTR Academy (HK) Company Limited 港鐵學院（香港）有限公司
Name of Award Granting Body	MTR Academy (HK) Company Limited 港鐵學院（香港）有限公司

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Title of Learning Programme	Advanced Diploma in Railway Engineering 鐵路工程高等文憑
Title of Qualification(s) [Exit Award(s)]	1. Advanced Diploma in Railway Engineering (Power Distribution) 鐵路工程高等文憑（配電） 2. Advanced Diploma in Railway Engineering (Signal & Communications) 鐵路工程高等文憑（信號及通訊） 3. Advanced Diploma in Railway Engineering (Permanent Way) 鐵路工程高等文憑（軌道） 4. Advanced Diploma in Railway Engineering (Rolling Stock) 鐵路工程高等文憑（鐵道車輛）
Primary Area of Study and Training	Engineering and Technology
Sub-area (Primary Area of Study and Training)	Electrical, Electronic and Mechanical Engineering and Services
Other Area of Study and Training	Not applicable
Sub-area (Other Area of Study and Training)	Not applicable
Industry	Electrical & Mechanical Services
Branch	Railway E&M Engineering
QF Level	Level 4
QF Credits	1. Advanced Diploma in Railway Engineering (Power Distribution): 120 2. Advanced Diploma in Railway Engineering (Signal & Communications): 120 3. Advanced Diploma in Railway Engineering (Permanent Way): 120 4. Advanced Diploma in Railway Engineering (Rolling Stock): 123

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Mode(s) of Delivery and Programme Length	Part-time: 2 Years 1. Advanced Diploma in Railway Engineering (Power Distribution): 1,200 notional learning hours (including 679.5 contact hours) 2. Advanced Diploma in Railway Engineering (Signal & Communications): 1,200 notional learning hours (including 655 contact hours) 3. Advanced Diploma in Railway Engineering (Permanent Way): 1,200 notional learning hours (including 660 contact hours) 4. Advanced Diploma in Railway Engineering (Rolling Stock): 1,230 notional learning hours (including 676.5 contact hours)
Intermediate Exit Award(s)	**Title of Qualification:** Certificate in Railway Engineering (QF Level 3) 鐵路工程證書（資歷架構第 3 級） **QF Level:** Level 3 **QF Credits:** 48 **Attainment:** Students must fulfil the following requirements: (i) Obtain at least 48 credits including all level 1 common subjects; (ii) With an overall Grade Point Average (GPA) of at least 2.0; and (iii) Achieve 70% of attendance rate from all subjects. **Specification of Competency Standards-based Intermediate Exit Award:** ☐ Yes ☑ No **Specification of Generic (Foundation) Competencies-based Intermediate Exit Award:** ☐ Yes ☑ No
Validity Period	3 Years (from 3 January 2017 to 2 January 2020)

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Number of Enrolment(s)	Two enrolments per year
Maximum Number of New Students	Maximum of 64 learners per year Maximum of 32 learners per class
Specification of Competency Standards-based Programme	☐ Yes ☑ No
Specification of Generic (Foundation) Competencies-based Programme	☐ Yes ☑ No
Notes to be indicated on the QR	This programme includes job attachment for each of the four streams. The Power Distribution and Signal & Communications streams include a job attachment of 18 QF credits to be conducted in 170 hours individually. The Permanent Way stream includes a job attachment of 9 QF credits to be conducted in 82 hours. The Rolling Stock stream includes a job attachment of 13 QF credits to be conducted in 135 hours. 此課程內 4 個專修範圍均包括跟崗學習部分，其中配電專修範圍和信號及通訊專修範圍分別包括 170 小時跟崗學習，佔 18 資歷學分；軌道專修範圍包括 82 小時跟崗學習，佔 9 資歷學分；鐵道車輛專修範圍包括 135 小時跟崗學習，佔 13 資歷學分。 This programme includes one intermediate exit award, namely Certificate in Railway Engineering (QF Level 3). 此課程包括 1 個中段結業資歷，資歷名稱為鐵路工程證書（資歷架構第 3 級）。
Address of Teaching/ Training Venue(s)	1. MTR Hung Hom Building, 1/F, 8 Cheong Wan Road, Hung Hom, Kowloon, Hong Kong 香港九龍紅磡暢運道 8 號港鐵紅磡大樓 1 樓 2. 43/F, Manhattan Place, 23 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong 香港九龍九龍灣宏泰道 23 號 Manhattan Place 43 樓 3. 9/F, Citylink Plaza, No. 1 Shatin Station Circuit, Shatin, N.T., Hong Kong

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	香港新界沙田車站圍 1 號連城廣場 9 樓 4. MTR Kowloon Bay Depot, Tai Yip Street, Kowloon Bay, Kowloon, Hong Kong 香港九龍九龍灣大業街港鐵九龍灣車廠

Recommendation
1. The Operator should state clearly the number and nature of self-study hours expected of students on top of the contact hours in the Subject Description Form for individual subject so that the students can plan their self-study accordingly for achieving the stated learning outcomes.

3. Programme Details

The following is the programme information provided by the Operator.

3.1 Programme Objectives

- To equip students with a broad understanding of the operations and maintenance activities in railway systems from the perspective of technology and engineering;
- To prepare students for embarking their careers as railway engineering professionals; and
- To equip students with essential skills to develop their supervisory roles in the relevant areas of railway engineering.

3.2 Programme Intended Learning Outcomes

- Apply technological and engineering knowledge and skills to undertake works on various railway engineering activities;
- Outline proper statutory requirements related to workplace safety in railway industry and basics of asset management;
- Inspect and perform testing to maintain various types in facilities for railway systems; and
- Supervise equipment maintenance work and communicate effectively with others to ensure its standard and safety.

<u>Stream Specific Intended Learning Outcomes for Power Distribution Stream</u>

- Explain commonly adopted high voltage and overhead line equipment used in railway power supply system;
- Differentiate different safety measures for high voltage power supply and overhead line systems; and
- Develop plan to carry out maintenance works for railway power supply system.

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Stream Specific Intended Learning Outcomes for Signal & Communications Stream

- Explain the operation principles of railway signalling systems deployed in Hong Kong;
- Diagnose faults on railway signalling sub-systems; and
- Supervise the installation of railway signalling sub-systems.

Stream Specific Intended Learning Outcomes for Permanent Way Stream

- Explain the key components and their purposes in railway track system;
- Develop plan to identify defects on railway track; and
- Evaluate proper plan and procedures to undertake maintenance measures for railway tracks.

Stream Specific Intended Learning Outcomes for Rolling Stock Stream

- Explain the structure and major components of passenger trains;
- Analyse possible causes of defects on rolling stock and select proper approaches and components to resolve such technical problems; and
- Develop plan to carry out maintenance works for the rolling stock.

3.3 Programme Structure

Subject Title	**QF Credit**
Level 1 Common Core Subjects	
Organization and Infrastructures of Modern Railway	
Introduction to Railway Systems and Maintenance	
Safety Procedure and Practices	
Introduction to Quality Assurance for Railway Systems	
Basic Mechanical Principles and Theory	
Fundamentals of Electricity and Electronics I	
Fundamentals of Electricity and Electronics II	
Integrated Skills Practice	
Managing Productivity in Engineering Works	
Intermediate Exit Award: Certificate in Railway Engineering (QF Level 3)	**48**
Level 2 Common Core Subjects	
Foundation Skills for Managing People	
Asset Management Essentials	
Level 2 Power Distribution Stream Specific Elective Subjects	
High Voltage Safety	
High Voltage Equipment and Testing	
Power System Protection	
Power Supply Network & Changeover Scheme	
Overhead Line System	
Overhead Line Installation & Maintenance – Cantilever	
Overhead Line Safety and Testing	
Job Attachment	

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Total for Power Distribution Stream (including common core and stream specific subjects)	**120**
Level 2 Signal & Communications Stream Specific Elective Subjects	
Railway Signalling Fundamentals	
Communication Systems for Railway	
Signalling Power Cubicles and UPS Maintenance	
Train Detection System Maintenance	
Relay Interlocking Installation and T&C Concept	
CBI and Point Machine Maintenance	
CBTC System Maintenance	
Job Attachment	
Total for Signal & Communications Stream (including common core and stream specific subjects)	**120**
Level 2 Permanent Way Stream Specific Elective Subjects	
Introduction of Rail Engineering	
Track Configuration	
Structures of Railway	
Maintenance of Track	
Railway Inspection Methods and Technique	
Rerailing	
Job Attachment	
Total for Permanent Way Stream (including common core and stream specific subjects)	**120**
Level 2 Rolling Stock Stream Specific Elective Subjects	
Rolling Stock Fundamentals	
Passenger Trains Overview	
Passenger Train Preventive Maintenance	
Passenger Train Door System	
Passenger Train Air Conditioning System	
Passenger Train Traction Control and Auxiliary Electrical System	
Mechanical Systems for Passenger Train	
Passenger Train Brake System	
Automatic Train Control (ATC) System	
Passenger Train Event Recorder System and Communication System	
Project	
Job Attachment	
Total for Rolling Stock Stream (including common core and stream specific subjects)	**123**

3.4 Graduation Requirements

<u>For Intermediate Exit Award: Certificate in Railway Engineering (QF Level 3)</u>

Students must fulfil the following requirements:

- Obtain at least 48 credits including all level 1 common subjects;

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- With an overall Grade Point Average (GPA) of at least 2.0; and
- Achieve 70% of attendance rate from all subjects.

For Power Distribution Stream

Students must fulfil the following requirements:

- Obtain at least 120 credits including common subjects and all specialism subjects;
- With an overall Grade Point Average (GPA) of at least 2.0; and
- Achieve 70% of attendance rate from all subjects.

For Signal & Communications Stream

Students must fulfil the following requirements:

- Obtain at least 120 credits including common subjects and all specialism subjects;
- With an overall Grade Point Average (GPA) of at least 2.0; and
- Achieve 70% of attendance rate from all subjects.

For Permanent Way Stream

Students must fulfil the following requirements:

- Obtain at least 120 credits including common subjects and all specialism subjects;
- With an overall Grade Point Average (GPA) of at least 2.0; and
- Achieve 70% of attendance rate from all subjects.

For Rolling Stock Stream

Students must fulfil the following requirements:

- Obtain at least 123 credits including common subjects and all specialism subjects;
- With an overall Grade Point Average (GPA) of at least 2.0; and
- Achieve 70% of attendance rate from all subjects.

3.5 Admission Requirements

Applicants shall:

have **2 years working experience** preferably in any engineering disciplines AND

- have attained Level 2 or above in five subjects including English Language, Chinese Language and Mathematics in HKCEE, or equivalent; OR
- have attained Level 2 or above in five subjects including English Language, Chinese Language and Mathematics in HKDSE, or equivalent; OR
- hold a relevant Recognition of Prior Learning (RPL) qualification in Electrical & Mechanical Services Industry at QF Level 3 or above; OR
- hold a certificate/diploma at QF Level 3 or above from a recognised institution.

4. Appeal

4.1 If the Operator is aggrieved by the determination made in this accreditation report, then pursuant to Part 3 of the Accreditation of Academic and Vocational Qualifications Ordinance (AAVQO) (Cap 592) the Operator has a right of appeal to

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the Appeal Board. Any appeal must be lodged within 30 days of the receipt of this accreditation report. Please refer to Cap. 592A (http://www.legislation.gov.hk/eng/home.htm) for the appeal rules. Details of the appeal procedure are contained in section 13 of the AAVQO and can be accessed from the QF website at http://www.hkqf.gov.hk.

5. Substantial Change

5.1 The accreditation status of the learning programme(s) will lapse upon the expiry of the validity period or HKCAAVQ may withdraw the accreditation status at any time during the validity period if there are substantial changes made to the programme(s) that have not been approved by HKCAAVQ. Please refer to *the 'Guidance Notes on Substantial Change to Accreditation Status'* in seeking approval for proposed changes. The Guidance Notes can be downloaded from the HKCAAVQ website.

6. Qualifications Register

6.1 Qualifications accredited by HKCAAVQ are eligible for entry into the Qualifications Register (QR) at http://www.hkqr.gov.hk for recognition under the Qualifications Framework (QF). Operators should apply separately to have their quality-assured qualifications entered into the QR.

6.2 Only learners who are admitted to the named accredited learning programme during the validity period and who have graduated with the named qualification uploaded in the QR will be considered to have acquired a qualification recognised under the QF.

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