資歷架構
Qualifications Framework

汽車業行業培訓諮詢委員會
Automotive Industry Training Advisory Committee

Specification of Competency Standards for the Automotive Industry in Hong Kong

Version 3

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Chapter I

Chapter 1:
The Emerging Trends of Automotive Industry in Hong Kong

1. Introduction

This chapter aims to explore the recent emerging trends within Hong Kong's automotive industry and their profound implications for the shifting competency requirements across all levels of practitioners, as well as the impact on organizational structures and job role configurations within the organizations, so as to provide a vital reference for the updates to the "Vocational Qualifications Pathway" (VQP) and the "Specification of Competency Standards" (SCS) for the Automotive industry.

Hong Kong's automotive ecosystem is uniquely positioned and stands at a pivotal crossroads. Devoid of manufacturing, its economic value is derived entirely from high-value services: sales, aftersales, maintenance, and parts logistics. This model has historically been robust, supported by a workforce skilled in servicing a dense and diverse fleet of primarily ICE vehicles. The rise of New Energy Vehicles (NEVs), particularly Electric Vehicles (EVs), alongside advancements in autonomous driving, smart mobility systems, and alternative fuels like hydrogen, is rendering traditional business models and skill sets obsolete. Besides, the era of incremental learning is over. A paradigm shift towards continuous, proactive upskilling is now critical for career survival and growth. For both current practitioners and the next generation, the future belongs not to those who simply repair cars, but to those who understand integrated, software-defined mobility ecosystems.

2. Consultation with Industry Stakeholders

To explore the latest industry trends and their profound implications for relevant competency requirements, the literature research was complemented by comprehensive consultations with key industry stakeholders including the major industry trade associations, motor vehicle distributors, small and medium enterprises (SMEs), relevant government departments and training providers to ensure a good grasp of the latest industry developments and the competency requirements for various job posts.

3. The Unique Context of Hong Kong's Motor Industry

Unlike automotive hubs such as Germany, Japan, or mainland China, Hong Kong has no significant vehicle manufacturing base. Its motor industry is almost entirely tertiary, built upon a robust ecosystem of:

- Importers, Distributors, and Dealers: Responsible for marketing, sales, and after-sales service.
- Service Centres and Workshops: Focusing on maintenance, repairs, and parts replacement.
- Parts Suppliers: Supporting the extensive fleet of private, commercial, and public vehicles.

This structure has, for decades, provided stable career paths. A mechanic could master internal combustion engines, a salesperson could become an expert in the features of luxury sedans, and a technician could specialize in brand-specific diagnostics. However, this stability is now a relic. The global automotive revolution, driven by climate imperatives and digitalization, has arrived in Hong Kong with full force. Government policies incentivizing EV adoption, the dense urban environment ideal for smart mobility solutions, and a tech-savvy population have created a fertile ground for rapid transformation. This report argues that the industry's marketing and operational evolution is inextricably linked to a parallel revolution in its human capital requirements.

4. The Winds of Change: Key Market Transformations

The landscape is being altered by several concurrent and interconnected mega-trends.

- The Electric Vehicle (EV) Revolution

  The most immediate and visible disruption. With government targets and tax incentives, EVs have surged from a niche product to a mainstream choice. This shift is not merely a change in fuel type; it represents a fundamental re-engineering of the automobile. The complex mechanical systems of engines, transmissions, and exhausts are being replaced by high-voltage battery packs, electric motors, power electronics, and sophisticated Battery Management Systems (BMS). For practitioners, this means the core of automotive engineering knowledge is undergoing a seismic shift.

- The Rise of Software-Defined Vehicles and Connectivity

  Modern vehicles, especially NEVs, are increasingly "computers on wheels." Features are updated via Over-The-Air (OTA) software updates, much like a smartphone. This introduces a new lexicon of concerns: cybersecurity, data privacy, infotainment systems, and autonomous driving algorithms. The traditional mechanic, armed with wrenches and spanners, is ill-equipped to diagnose a bug in a vehicle's operating system or a sensor failure in its autonomous driving suite.

- Smart Mobility and the "Low-Altitude Economy"

  The concept of mobility is expanding beyond the personal car. Hong Kong is actively exploring Mobility-as-a-Service (MaaS), integrated smart traffic management systems to alleviate congestion, and the potential of drones for logistics and transport—the so-called "low-altitude economy." This diversification creates entirely new career avenues that intersect with IT, data analytics, and urban planning, demanding a workforce that understands the interplay between vehicles, infrastructure, and data networks.

- Exploration of New Fuel Pathways

  While EVs dominate the current conversation, the search for sustainable energy continues. Hydrogen fuel cell vehicles and those powered by methanol represent alternative pathways that may suit specific use cases, such as commercial transport. Understanding the principles, safety protocols, and maintenance requirements of these systems will be a valuable niche specialization for forward-thinking technicians.

5. Impact on Current Practitioners: An Urgent Call for Reskilling

The established workforce—the backbone of the industry—faces the most acute challenge. The skills that secured their careers for years are rapidly depreciating.

The Sales Professional: From Product Expert to Mobility Consultant.The role of the car salesperson is being transformed. Previously, the focus was on horsepower, torque, leather interiors, and brand prestige. Today, the conversation has shifted dramatically:

- EV-Specific Metrics: Sales staff must confidently explain range, charging times (AC vs. DC), battery degradation, and the location and accessibility of Hong Kong's expanding charging network.
- Technology Ambassador: They must demystify complex technologies like Advanced Driver-Assistance Systems (ADAS), autonomous parking, and connected car services. The customer is no longer just buying a mode of transport; they are buying a piece of technology.
- New Ownership Models: With the potential rise of subscription services and MaaS, sales roles may evolve into managing customer relationships within broader mobility packages.
- The Challenge: Sales practitioners who fail to transition from a transactional, feature-based pitch to becoming trusted advisors on a customer's entire mobility lifecycle will be left behind.

The Mechanic/Technician: The Shift from Wrenches to Code. This is the most profound transformation. The traditional "grease monkey" stereotype is over.

- High-Voltage Systems: Working on EVs requires specialized training and certification for handling high-voltage systems. A mistake is not just costly; it can be fatal. Knowledge of insulation testing, high-voltage shutdown procedures, and specific personal protective equipment (PPE) is non-negotiable.
- Diagnostics 2.0: Diagnosing issues increasingly involves connecting to the vehicle's CAN (Controller Area Network) bus, interpreting data logs, and troubleshooting software conflicts. Technicians need IT literacy alongside mechanical aptitude.
- Decline of Mechanical Work: With far fewer repairable /moving parts, EVs require less routine maintenance (no oil changes, spark plugs, or timing belts). The workshop revenue model must shift from maintenance to diagnostics, software updates, and module replacements.
- The Challenge: Master technicians who invested decades in understanding ICE intricacies may find their expertise becoming obsolete. A willingness to retrain from the ground up in electrical and electronic systems is essential.

6. Career Development for the Next Generation: A New Educational Paradigm

For young people considering a career in the motor industry, the old pathways are insufficient. The industry can no longer be seen as a fallback option but must be rebranded as a high-tech, future-proof career.

a. Emerging Roles and Specializations

The future motor industry professional might have a job title that doesn't exist today:

- EV Powertrain Specialist: Focused exclusively on batteries, motors, and charging systems.
- ADAS Calibration Technician: Expert in calibrating the complex array of cameras, radar, and LiDAR sensors that enable autonomous features.
- Vehicle Data Analyst: Interprets the terabytes of data generated by connected vehicles to predict maintenance needs, improve safety, and develop new features.
- Mobility Service Designer: Works on integrating various transport options into seamless user experiences via apps and platforms.
- Drone Operations and Maintenance Technician: Supporting the nascent low-altitude economy.

b. The Imperative for Modernized Education and Training

Hong Kong's educational institutions and vocational training providers must urgently align their curricula with industry needs.

- Curriculum Overhaul: VTC and relevant higher diploma programs must integrate modules on EV technology, mechatronics, programming fundamentals (e.g., Python for data analysis), and network basics.
- Industry-Academia Partnerships: Manufacturers like Tesla, BYD, and Mercedes-Benz should be encouraged to partner with local institutions to provide certified training programs, ensuring skills are directly relevant.
- Promoting the "New Collar" Narrative: A concerted marketing effort is needed to shift public perception. Careers in the modern motor industry are "new collar" jobs—blending technical knowledge with digital skills, offering good pay, and sitting at the forefront of technological innovation.

7. The Marketing Evolution: Selling the Future of Mobility

The industry's marketing strategies are evolving in lockstep with its products and services, creating new demands on marketing professionals.

- Digital-First Engagement: Car buyers now research extensively online. Marketing must be digital-native, leveraging social media, influencer partnerships, and immersive online configurators.

- Experience over Product: Test drives are no longer just about the drive; they are about demonstrating the user interface, the seamless integration with a smartphone, and the activation of autonomous features. Marketing must create experiential events.

- Sustainability as a Core Message: Brand storytelling must authentically incorporate sustainability, not just as an environmental benefit but as a smart technological choice.

- B2B and Fleet Sales: With the growth of ride-hailing and potential MaaS models, marketing skills tailored to B2B and fleet sales, focusing on Total Cost of Ownership (TCO) and reliability, will become increasingly valuable.

8. Conclusion and Recommendations: A Collective Responsibility

The transformation of Hong Kong's motor industry is not a distant future prospect; it is happening now. The choice for its workforce is stark: adapt or risk irrelevance. This challenge cannot be shouldered by individuals alone. It requires a concerted effort from all stakeholders:

a. For Practitioners:

- Embrace a Mindset of Lifelong Learning: View ongoing education not as a burden, but as the key to career longevity.

- Proactively Seek Certification: Pursue manufacturer-specific and industry-wide certifications in EV handling, ADAS, and other emerging technologies.

- Develop Digital Fluency: Become comfortable with diagnostic software, data interpretation, and understanding the basic principles of vehicle connectivity.

b. For Employers (Dealers, Workshops):

- Invest Heavily in Training: Allocate resources for continuous staff training and development. This is not an expense, but a critical investment in business sustainability.

- Modernize Workshop Infrastructure: Equip service centres with the necessary tools, software, and safety equipment to handle the new generation of vehicles.

- Revise Recruitment Strategies: Look for candidates with backgrounds in electronics, mechatronics, and IT, not just traditional motor vehicle engineering.

c. For Educational Institutions and the Government:

- Future-Proof Vocational Training: Rapidly update VTC and other curricula to reflect the technological reality of the industry.

- Provide Funding and Incentives: Offer subsidies for retraining programs for existing workers and incentives for young people to enter high-tech automotive trades.

- Facilitate Industry Collaboration: Act as a bridge between industry leaders and educational bodies to ensure a pipeline of talent with the right skills.

- The Greater Bay Area presents a historic opportunity. By proactively forging a collaborative skills ecosystem, Hong Kong can transform its vulnerability into a strength. It can position its service workforce as the most highly trained, technologically adept, and professionally certified in the region.

- Given the absence of local manufacturing, Hong Kong cannot develop these future-proof skills in isolation. A strategic partnership with the Greater Bay Area (GBA) is essential. The GBA, a global hub for EV manufacturing and R&D, offers direct access to cutting-edge technology, proprietary training, and established certification frameworks.

- Collaboration should focus on co-developing standardized training curricula, establishing "train-the-trainer" programs with GBA manufacturers, and creating a unified, recognized skill certification. This will ensure the Hong Kong workforce meets regional standards, enhances labour mobility, and elevates the profession's status. For Hong Kong to remain a competitive automotive service hub, integrating its skill development ecosystem with the GBA is imperative for survival and growth.

9. Updating the "Vocational Qualifications Pathway" (VQP) and "Specification of Competency Standards" (SCS) for the Automotive Industry

In response to the above emerging industry trends, the Automotive Industry Training Advisory Committee has updated the "Vocational Qualifications Pathway" (VQP) and the "Specification of Competency Standards" (SCS). This exercise aims to provide stakeholders, e.g. employers and training providers with up-to-date competency requirements for relevant job posts, which serves as a useful reference for recruitment and training, as well as providing competencies of registered practitioners for reference by the regulatory authority. The updating exercise covers the following salient points:

- Reviewing and updating the coverage, structure and Units of Competency (UoCs) of the VQP comprehensively.

- Developing new UoCs relevant to New Energy Vehicles (NEVs) including Electric Vehicles (EVs), Electric Motorcycles, and hydrogen fuel cell vehicles to address the training needs and keep abreast of the development of "Voluntary Registration Scheme for Vehicle Mechanics" under Electrical and Mechanical Services Department (EMSD).

- Collaborating with the Transport Department to develop VQP for Vehicle Inspection and Prosecution sectors and the UoCs for relevant job posts, i.e. Vehicle Tester and Motor Vehicle Examiner II to facilitate application of QF for recruitment, training, and professional development.

- Enhancing the VQP by adding the job posts at QF Level 2 (Automotive Assistant / Assistant Mechanic) and QF Level 6 (General Manager) to facilitate manpower development for the industry in the long term

- Developing UoCs for classic car restoration to enhance training quality and facilitate inheritance of relevant skills and culture.

Chapter II

汽車業職業資歷階梯
Vocational Qualifications Pathway for Automotive Industry

資歷級別 QF Level ＼ 職能範疇 Functional Area	汽車銷售 Vehicle Sales	零件銷售 Vehicle Parts Sales	汽車維修保養服務 Vehicle Servicing and Maintenance	車輛檢驗及檢控 Vehicle Inspection & Prosecution
資歷架構 第六級 QF Level 6	總經理 General Manager			汽車檢驗主任職系 透過運輸署內部晉升階梯，晉升為更高級別汽車檢驗主任
資歷架構 第五級 QF Level 5	銷售經理 Sales Manager	零件銷售經理 Parts Manager	維修經理 Service Manager	
資歷架構 第四級 QF Level 4	銷售主任 Sales Executive	零件主任 Parts Executive	意外損毀評估員 Vehicle Damage Assessor - 維修顧問 Service Advisor - 技術員 (測試及診斷) Technician (Testing and Diagnostic) - 維修主任 (監工/領班) Service Executive (Supervisor / Foreman)	二級汽車檢驗主任 Motor Vehicle Examiner II
資歷架構 第三級 QF Level 3	汽車銷售員 Salesman	零件銷售員 Partsman	- 車輛維修技工(電動車)** Vehicle Mechanic (Electric Vehicle)** - 車輛維修技工(石油氣車輛)*** Vehicle Mechanic (LPG Vehicle)*** 車輛維修技工 (機械服務) / (電工服務) / (車身修理) / (車身噴漆)* Vehicle Mechanic (Mechanical Services) / (Electrical Services) / (Body Repair) / (Body Painting)*	車輛檢驗員 Vehicle Tester
資歷架構 第二級 QF Level 2	汽車業助理 Motor Trade Assistant 車身建造技工 Body Building Mechanic* 助理技工 Assistant Mechanic 車輛維修技工(電單車) Vehicle Mechanic (Motorcycle)*			

Remarks:
備註：
* 有關車輛維修技工自願註冊計劃之詳情，可參閱以下機電工程署網頁：
For details of Voluntary Registration Scheme for Vehicle Mechanics (VRSVM), please visit the following EMSD website:
https://www.emsd.gov.hk/tc/supporting_government_initiatives/registration_scheme_for_vehicle_maintenance/voluntary_for_vehicle_mechanics/index.html

** 有關註冊電動車維修服務範疇之詳情，可參閱以下機電工程署網頁：
For details of EV maintenance scope, please visit the following EMSD website:
https://www.emsd.gov.hk/tc/supporting_government_initiatives/registration_scheme_for_vehicle_maintenance/electric_vehicle_maintenance_service_scope/index.html

*** 有關成為保養及維修石油氣車輛人士之詳情，可參閱以下機電工程署網頁：
For details of becoming competent person for maintenance and repair LPG vehicle, please visit the following EMSD website:
https://www.emsd.gov.hk/tc/gas_safety/lpg_vehicle_scheme/information_on_maintenance_and_repair_of_lpg_vehi/index.html

汽車業職業資歷階梯
Vocational Qualifications Pathway (VQP) for Automotive Industry

汽車銷售
Vehicle Sales

總經理
General Manager

▲

銷售經理
Sales Manager

▲

銷售主任
Sales Executive

▲

汽車銷售員
Salesman

▲

- 汽車業助理 Motor Trade Assistant
- 車身建造技工 Body Building Mechanic
- 助理技工 Assistant Mechanic
- 車輛維修技工（電單車） Vehicle Mechanic (Motorcycle)

汽車業助理
Motor Trade Assistant

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 New UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108567L1	1	認識勞工相關法例	Be familiar with relevant labour regulations
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals and Understand their characteristics
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111663L2	2	識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111666L2		識別電單車系統及零部件的結構與運作原理	Identify the structure and operating principle of motorcycle systems and components
111657L2		運送車輛	Transport vehicles
111776L2		介紹各類型車輛及其配件的特性及相關的產品交易資訊	Introduce the characteristics of different types of vehicles and their accessories, and the product transaction information
108556L2		處理各種形式的付款	Handle various kinds of payment methods
108573L2		銷售汽車	Perform selling of vehicles
108574L2		銷售汽車配件	Perform sales of vehicle parts and accessories
108575L2		提供銷售支援	Provide supporting services to vehicle selling
108576L2		對潛在/目標客戶進行推銷令銷售機會增加	Perform cold calls to potential/target customers to diversify sales opportunities
108577L2		進行產品/服務陳述	Deliver a product or service presentation
108597L2		安排交收及運送汽車	Arrange for acceptance, delivery and transportation of vehicles
108598L2		執行汽車入口的準備工作	Handle preparation work for vehicle importation
108601L2		交收及運送零部件	Accept, deliver and transport parts and accessories
108602L2		辨識/確定零部件	Identify/confirm vehicle parts and accessories
108603L2		執行汽車零部件盤點工作	Participate in motor vehicle parts stocktaking activities
108627L2		存取零部件	Store and retrieve the parts and accessories
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
108813L2		在汽車產業環境中維持良好的工作關係	Maintain Working Relationships in the Motor Vehicle Environment

其他建議能力單元：

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱 Title of Unit of Competency (UoC)	
108675L2	2	摩托車交付前準備和檢查	Motorcycle Pre-delivery Preparation and Inspection
111686L2		交付汽車前的準備及檢查	Pre-delivery Preparation and Inspection of vehicle
111777L3	3	新能源汽車銷售技巧	Sales technique for new energy vehicles
111658L3		高電壓和儲存加壓氣體車輛的處理和儲存風險	Risk of handling and storage of high electric voltage and pressurized gas vehicles
108581L3		安排汽車保險	Arrange for vehicle insurance
108582L3		安排新車交收程序	Arrange receipt, and delivery procedures of imported new vehicles
111660L3		接待顧客	Attend to customers

助理技工
Asistant Mechanic

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108634L1	1	使用一般汽車維修工具和設備	Employ general vehicle servicing tools and equipment
108637L1		更換車身金屬板及配件	Replace metallic panels and accessories of vehicle body
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
108783L1		工作場所內部整理的有關程序	Draw up procedure of housekeeping in motor vehicle environments
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111688L2	2	為修護電氣化車輛高壓電系統工作進行安全設置	Conduct safety setup for the service of the high-voltage electrical system of electrified vehicles
111690L2		識別電動車的基本原理	Identify the fundamentals of electrified vehicles
111665L2		拆卸、檢查及更換汽車低壓電氣系統及配件	Dismantle, inspect and replace the low-voltage vehicle electrical systems and accessories
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
111663L2		瞭解汽車和組件的結構及工作原理	Identify the structure and operating principle of vehicle systems and components
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111664L2		拆卸、更換和重裝汽車系統組件	Dismantle, replace and re-assemble vehicle system components
111685L2		進行汽車的日常維護	Carry out Routine Vehicle Maintenance
111668L2		使用一般焊接設備	Use general welding equipment
111684L2		檢修及更換輪胎	Check, repair and replace tyres
111691L2		檢查及維修汽車的傳動和底盤系統	Check and repair vehicle transmission and under-chassis systems
108655L2		檢修汽車電子控制系統及設備	Check and repair vehicle electronic control systems and devices
108657L2		拆裝門窗及組件	Dismantle and install the windows and doors as well as their components
108659L2		檢修座位及內部裝置	Check and repair vehicle seats and interior fittings
108663L2		使用及維護一般噴塗設備	Use and maintain general painting equipment

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111671L2	2	去除舊漆膜及金屬表面處理	Remove paint and process surface treatment on metallic panel
111673L2		進行車身貼紙及噴塗(包括塑料)工序	Carry out vehicle body masking and painting (include plastic components) process
111686L2		交付汽車前的準備及檢查	Pre-delivery Preparation and Inspection of vehicle
111687L2		拆卸和更換汽車發動機單元及零部件	Remove and replace vehicle engine units and components
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108660L2	2	檢查及修補車身玻璃纖維板	Check and mend the glass fibre panels of vehicle body
111732L3	3	車身焊接	Perform Vehicle body welding
111700L3		電動汽車高壓電力系統的斷電和復電	Isolate and reinstate the high-voltage electrical system of electrified vehicles
111778L3		安排顧客測試車輛	Arrange vehicle test drives for customers' interests
111727L3		檢修汽車各類燃料供應系統	Check and repair various types of fuel supply systems
111734L3		診斷及修復故障的汽車引擎和組件	Diagnose and rectify the faulty vehicle engine and components
111722L3		診斷及修復車輛傳動系統的故障	Diagnose and rectify vehicle drivetrain faults
111718L3		維護各種車輛維修工具和設備	Maintain various vehicle servicing tools and equipment
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste

車身建造技工
Body Building Mechanics

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108757L1	1	使用車身裝嵌的一般物料及工具	Use general materials and tools for vehicle body assembling
108783L1		工作場所內部整理的有關程序	Draw up procedure of housekeeping in motor vehicle environments
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111656L2	2	執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
111663L2		識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111668L2		使用一般焊接設備	Use general welding equipment
108672L2		進行汽車車身部件繫穩作業	Vehicle body parts fastening operation
108758L2		運用基本車身組裝技術	Apply basic vehicle body building techniques
111678L2		組裝車身框架	Build the body frame
111679L2		組裝地板、車窗、通道、梯級及車門	Assemble the floor, windows, passageways, stairs and doors of vehicle
111680L2		組裝座位及內部裝置	Assemble seats and interior fittings
111696L2		在汽車上組裝暖氣、通風及空調系統	Assemble heat, ventilation and air-conditioning (HVAC) systems on vehicles
108763L2		組裝照明及顯示系統	Assemble lighting and indicating systems
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment
111681L2		製作車身夾具	Produce vehicle body building fixtures
111682L2		組裝車身板	Assemble vehicle body panels
111732L3	3	車身焊接	Perform Vehicle body welding
111660L3		接待顧客	Attend to Customers

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108695L3	3	監察及保養車身維修儀器及設備	Monitor and maintain instruments and equipment
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste
108769L3		判斷汽車在有關法規（交通、環保及道路安全）下使用的合法性	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)
108814L3		進行技術示範	Conduct demonstration of technical skills

車輛維修技工（電單車）
Vehicle Mechanic (Motorcycle)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111666L2	2	識別電單車系統及零部件的結構與運作原理	Identify the structure and operating principle of motorcycle systems and components
108674L2		進行定期電單車保養	Carry out Routine Motor Motorcycle Maintenance
108675L2		進行電單車交車準備及檢查	Carry Out Motorcycle Pre-delivery Preparation and Inspections
108676L2		拆卸更換電單車發動機動力傳動裝置及部件	Remove and Replace Motorcycle Engine Power-train Units and Components
108677L2		拆卸、更換電單車電器裝置及部件	Remove and replace motorcycle electrical units and components
108678L2		拆卸、更換電單車底盤裝置及部件	Remove and replace motorcycle chassis units and components
108679L2		拆卸、更換電單車傳動裝置及部件	Remove and replace motorcycle driveline units and components
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment
111689L2		拆卸和更換電單車動力總成及相關零部件	Remove and replace motorcycle powertrain and associated components
108681L2		檢查、修理及更換電單車輪胎	Inspect, repair and replace motorcycle tyres
108718L3	3	故障診斷及修正電單車發動機及其配件	Diagnose and Rectify Motorcycle Engine and Component Faults
108719L3		故障診斷及修正電單車底盤系統	Diagnose and Rectify Motorcycle Chassis System Faults
108720L3		故障診斷及修正電單車變速箱及傳動系統	Diagnose and Rectify Motorcycle Transmission and Driveline System Faults
108721L3		故障診斷及修正電單車電氣系統	Diagnose and Rectify Motorcycle Electrical System Faults
111731L3		檢查和大修電單車機械部件	Inspect and overhaul motorcycle mechanical units
111660L3		接待顧客	Attend to customers

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111674L2	2	掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
108707L3	3	診斷及分析各類汽車電子數據控制系統故障	Conduct fault diagnosis and analysis on vehicle electronic data control systems
108814L3		進行技術示範	Conduct demonstration of technical skills

銷售員
Salesman

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111776L2	2	介紹各類型車輛及其配件的特性及相關的產品交易資訊	Introduce the characteristics of different types of vehicles and their accessories, and the product transaction information
108573L2		銷售汽車	Perform selling of vehicles
108576L2		對潛在/目標客戶進行推銷令銷售機會增加	Perform cold calls to potential/target customers to diversify sales opportunities
108597L2		安排交收及運送汽車	Arrange for acceptance, delivery and transportation of vehicles
111660L3	3	接待顧客	Attend to customers
111778L3		安排顧客測試車輛	Arrange vehicle test drive for customers' interests
108579L3		執行汽車產品營銷計劃	Implement sales plan for vehicle products
108580L3		安排汽車財務信貸	Arrange financial loan for vehicles
108581L3		安排汽車保險	Arrange for vehicle insurance
108582L3		安排新車交收程序	Arrange receipt, and delivery procedures of imported new vehicles
108753L3		提供汽車估值及折舊貼換交易服務	Provide services on value assessment and trade-in of vehicles
108769L3		判斷汽車在有關法規（交通、環保及道路安全）下使用的合	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)
108794L3		管理顧客關係	Manage customer relationship
108747L3		提供維修建議及諮詢服務	Offer servicing advice and consulting services
108591L3		執行市場推廣計劃	Implement marketing plans
108590L3		執行市場調查計劃	Implement market research plan
111777L3		新能源汽車銷售技巧	Sales technique for new energy vehicles
111658L3		高電壓和儲存加壓氣體車輛的處理和儲存風險	Master the risk of handling and storage of high electric voltage and pressurized gas vehicles

汽車銷售主任
Vehicle Sales Executive

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108590L3	3	執行市場調查計劃	Implement market research plan
108591L3		執行市場推廣計劃	Implement marketing plans
111779L4	4	展示/陳列汽車	Exhibit / Display vehicles
108795L4		管理顧客服務	Manage customer services
108796L4		處理顧客投訴	Handle customers' complaints
108592L4		制定市場推廣計劃	Formulate marketing plans
111780L4		採購舊車	Purchase used vehicles
108584L4		採購新車	Purchase new vehicles
108599L4		制定車輛交收及運送程序	Establish procedures for the receipt, dispatch and delivery of vehicles
108559L4		制定各種付款形式的處理程序	Develop procedures for various forms of payment
111775L4		汽車業電子商貿	Application of e-commerce in automotive services e-commerce in automotive services
108570L4		安排填補職位空缺	Arrange filling of job vacancies
108770L4		推廣基層品質管理文化	Promote the culture of quality management in elementary level staffs

其他建議能力單元：

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱 Title of Unit of Competency (UoC)	
108558L3	3	運用成本會計	Adopt cost accounting techniques
108772L4	4	監控維修工序質素	Monitor the quality of servicing work
108773L4		初步分析工序失誤	Conduct preliminary analysis on procedural deficiencies
108594L5	5	撰寫汽車產品市場推廣文稿	Write promotion script for the marketing of vehicle products
108775L5		執行一般品質管理稽核	Conduct quality audit

銷售經理
Sales Manager

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108562L5	5	制定財務管理方案	Compile financial reports applicable to the automotive industry
108585L5		制定汽車產品銷售預算	Formulate sales estimates of vehicle products
108586L5		制定汽車產品營銷計劃	Formulate marketing plans for vehicle products
108593L5		制定市場調查計劃	Formulate market research plans
108594L5		撰寫汽車產品市場推廣文稿	Write promotion script for the marketing of vehicle products
108797L5		制定顧客服務計劃	Formulate customer services plan
108561L5		撰寫汽車業財務報告	Compile financial reports applicable to the automotive industry
108775L5		執行一般品質管理稽核	Conduct quality audit
108776L5		編制一般品質管理課程	Design quality management courses
108780L5		制定提升員工品質管理意識的計劃	Formulate plans to enhance staff awareness on quality management
111781L5		執行汽車公司環境、社會和治理 (ESG)	Execute the environmental, social and governance (ESG) for automotive company
108588L6	6	制定汽車產品銷售人員管理策略	Formulate management strategy for salespersons of vehicle products
108565L6		制定風險管理方案	Formulate risk management plans
108596L6		建立汽車品牌策略	Formulate brand strategy for vehicles

其他建議能力單元：

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱 Title of Unit of Competency (UoC)	
108568L4	4	評核員工工作表現及專業知識	Appraise staff performance and professional knowledge
108569L4		編制員工培訓計劃	Draw up staff training programme
108771L4		協調落實品質管理系統	Coordinate and implement quality management systems
108564L5	5	制定機構營運管理整體計劃方案	Formulate a comprehensive scheme for organisational operation management
108571L5		評估人力市場及確立薪酬制度	Assess human resources market and establish remuneration system
108587L6	6	制定汽車產品銷售策略	Formulate vehicle products sales strategy
108589L6		制定新車採購策略	Formulate purchasing strategy for new vehicles
108782L6		推行全面品質管理策略	Implement total quality management strategy

總經理
General Manager

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108565L6	6	制定風險管理方案	Formulate risk management plans
108587L6		制定汽車產品銷售策略	Formulate vehicle products sales strategy
108589L6		制定新車採購策略	Formulate purchasing strategy for new vehicles
108595L6		制定市場推廣策略	Formulate marketing strategy
108596L6		建立汽車品牌策略	Formulate brand strategy for vehicles
108610L6		制定零部件銷售策略	Formulate sales strategy for parts and accessories
108781L6		制定企業品質管理政策	Formulate quality management policy
108798L6		制定顧客服務管理策略	Formulate customer service management strategy
108799L6		制定顧客關係管理策略	Formulate customer relation management strategy
108811L6		制定企業整體職安健政策	Formulate comprehensive occupational safety and health policy for the enterprise
108812L6		制定企業整體環保政策	Formulate comprehensive environmental protection policy for the enterprise
108566L7	7	制定企業發展策略	Formulate corporate development strategy

其他建議能力單元：

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108791L5	5	制定設備管理系統	Establish equipment management system
111662L5		制定職安健管理系統	Establish occupational safety and health management system
108810L5		制定環保管理系統	Establish environmental protection management system
108588L6	6	制定汽車產品銷售人員管理策略	Formulate management strategy for salespersons of vehicle products
108632L6		制定汽車零部件倉庫管理策略	Formulate management strategy for auto parts and accessories warehouse
108782L6		推行全面品質管理策略	Implement total quality management strategy
111772L6		制定汽車性能的測試程序	Establish the testing procedure for vehicle performance
111773L6		分析汽車測試結果並評估性能	Analyse the vehicle test result and evaluate the performance

汽車業職業資歷階梯
Vocational Qualifications Pathway (VQP) for Automotive Industry

零件銷售
Vehicle Parts Sales

總經理
General Manager

▲

零件銷售經理
Parts Manager

▲

零件主任
Parts Executive

▲

零件銷售員
Partsman

▲

- 汽車業助理 Motor Trade Assistant
- 車身建造技工 Body Building Mechanic
- 助理技工 Assistant Mechanic
- 車輛維修技工(電單車) Vehicle Mechanic (Motorcycle)

汽車業助理
Motor Trade Assistant

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 New UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108567L1	1	認識勞工相關法例	Be familiar with relevant labour regulations
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals and Understand their characteristics
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111663L2	2	識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111666L2		識別電單車系統及零部件的結構與運作原理	Identify the structure and operating principle of motorcycle systems and components
111657L2		運送車輛	Transport vehicles
111776L2		介紹各類型車輛及其配件的特性及相關的產品交易資訊	Introduce the characteristics of different types of vehicles and their accessories, and the product transaction information
108556L2		處理各種形式的付款	Handle various kinds of payment methods
108573L2		銷售汽車	Perform selling of vehicles
108574L2		銷售汽車配件	Perform sales of vehicle parts and accessories
108575L2		提供銷售支援	Provide supporting services to vehicle selling
108576L2		對潛在/目標客戶進行推銷令銷售機會增加	Perform cold calls to potential/target customers to diversify sales opportunities
108577L2		進行產品/服務陳述	Deliver a product or service presentation
108597L2		安排交收及運送汽車	Arrange for acceptance, delivery and transportation of vehicles
108598L2		執行汽車入口的準備工作	Handle preparation work for vehicle importation
108601L2		交收及運送零部件	Accept, deliver and transport parts and accessories
108602L2		辨識/確定零部件	Identify/confirm vehicle parts and accessories
108603L2		執行汽車零部件盤點工作	Participate in motor vehicle parts stocktaking activities
108627L2		存取零部件	Store and retrieve the parts and accessories
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
108813L2		在汽車產業環境中維持良好的工作關係	Maintain Working Relationships in the Motor Vehicle Environment

其他建議能力單元：

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱 Title of Unit of Competency (UoC)	
108675L2	2	摩托車交付前準備和檢查	Motorcycle Pre-delivery Preparation and Inspection
111686L2		交付汽車前的準備及檢查	Pre-delivery Preparation and Inspection of vehicle
111777L3	3	新能源汽車銷售技巧	Sales technique for new energy vehicles
111658L3		高電壓和儲存加壓氣體車輛的處理和儲存風險	Risk of handling and storage of high electric voltage and pressurized gas vehicles
108581L3		安排汽車保險	Arrange for vehicle insurance
108582L3		安排新車交收程序	Arrange receipt, and delivery procedures of imported new vehicles
111660L3		接待顧客	Attend to customers

車身建造技工
Body Building Mechanics

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108757L1	1	使用車身裝嵌的一般物料及工具	Use general materials and tools for vehicle body assembling
108783L1		工作場所內部整理的有關程序	Draw up procedure of housekeeping in motor vehicle environments
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111656L2	2	執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
111663L2		識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111668L2		使用一般焊接設備	Use general welding equipment
108672L2		進行汽車車身部件繫穩作業	Vehicle body parts fastening operation
108758L2		運用基本車身組裝技術	Apply basic vehicle body building techniques
111678L2		組裝車身框架	Build the body frame
111679L2		組裝地板、車窗、通道、梯級及車門	Assemble the floor, windows, passageways, stairs and doors of vehicle
111680L2		組裝座位及內部裝置	Assemble seats and interior fittings
111696L2		在汽車上組裝暖氣、通風及空調系統	Assemble heat, ventilation and air-conditioning (HVAC) systems on vehicles
108763L2		組裝照明及顯示系統	Assemble lighting and indicating systems
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment
111681L2		製作車身夾具	Produce vehicle body building fixtures
111682L2		組裝車身板	Assemble vehicle body panels
111732L3	3	車身焊接	Perform Vehicle body welding
111660L3		接待顧客	Attend to Customers

其他建議能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108695L3	3	監察及保養車身維修儀器及設備	Monitor and maintain instruments and equipment
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste
108769L3		判斷汽車在有關法規（交通、環保及道路安全）下使用的合法性	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)
108814L3		進行技術示範	Conduct demonstration of technical skills

助理技工
Asistant Mechanic

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108634L1	1	使用一般汽車維修工具和設備	Employ general vehicle servicing tools and equipment
108637L1		更換車身金屬板及配件	Replace metallic panels and accessories of vehicle body
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
108783L1		工作場所內部整理的有關程序	Draw up procedure of housekeeping in motor vehicle environments
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111688L2	2	為修護電氣化車輛高壓電系統工作進行安全設置	Conduct safety setup for the service of the high-voltage electrical system of electrified vehicles
111690L2		識別電動車的基本原理	Identify the fundamentals of electrified vehicles
111665L2		拆卸、檢查及更換汽車低壓電氣系統及配件	Dismantle, inspect and replace the low-voltage vehicle electrical systems and accessories
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
111663L2		瞭解汽車和組件的結構及工作原理	Identify the structure and operating principle of vehicle systems and components
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111664L2		拆卸、更換和重裝汽車系統組件	Dismantle, replace and re-assemble vehicle system components
111685L2		進行汽車的日常維護	Carry out Routine Vehicle Maintenance
111668L2		使用一般焊接設備	Use general welding equipment
111684L2		檢修及更換輪胎	Check, repair and replace tyres
111691L2		檢查及維修汽車的傳動和底盤系統	Check and repair vehicle transmission and under-chassis systems
108655L2		檢修汽車電子控制系統及設備	Check and repair vehicle electronic control systems and devices
108657L2		拆裝門窗及組件	Dismantle and install the windows and doors as well as their components
108659L2		檢修座位及內部裝置	Check and repair vehicle seats and interior fittings
108663L2		使用及維護一般噴塗設備	Use and maintain general painting equipment

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111671L2	2	去除舊漆膜及金屬表面處理	Remove paint and process surface treatment on metallic panel
111673L2		進行車身貼紙及噴塗(包括塑料)工序	Carry out vehicle body masking and painting (include plastic components) process
111686L2		交付汽車前的準備及檢查	Pre-delivery Preparation and Inspection of vehicle
111687L2		拆卸和更換汽車發動機單元及零部件	Remove and replace vehicle engine units and components
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108660L2	2	檢查及修補車身玻璃纖維板	Check and mend the glass fibre panels of vehicle body
111732L3	3	車身焊接	Perform Vehicle body welding
111700L3		電動汽車高壓電力系統的斷電和復電	Isolate and reinstate the high-voltage electrical system of electrified vehicles
111778L3		安排顧客測試車輛	Arrange vehicle test drives for customers' interests
111727L3		檢修汽車各類燃料供應系統	Check and repair various types of fuel supply systems
111734L3		診斷及修復故障的汽車引擎和組件	Diagnose and rectify the faulty vehicle engine and components
111722L3		診斷及修復車輛傳動系統的故障	Diagnose and rectify vehicle drivetrain faults
111718L3		維護各種車輛維修工具和設備	Maintain various vehicle servicing tools and equipment
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste

車輛維修技工（電單車）
Vehicle Mechanic (Motorcycle)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111666L2	2	識別電單車系統及零部件的結構與運作原理	Identify the structure and operating principle of motorcycle systems and components
108674L2		進行定期電單車保養	Carry out Routine Motor Motorcycle Maintenance
108675L2		進行電單車交車準備及檢查	Carry Out Motorcycle Pre-delivery Preparation and Inspections
108676L2		拆卸更換電單車發動機動力傳動裝置及部件	Remove and Replace Motorcycle Engine Power-train Units and Components
108677L2		拆卸、更換電單車電器裝置及部件	Remove and replace motorcycle electrical units and components
108678L2		拆卸、更換電單車底盤裝置及部件	Remove and replace motorcycle chassis units and components
108679L2		拆卸、更換電單車傳動裝置及部件	Remove and replace motorcycle driveline units and components
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment
111689L2		拆卸和更換電單車動力總成及相關零部件	Remove and replace motorcycle powertrain and associated components
108681L2		檢查、修理及更換電單車輪胎	Inspect, repair and replace motorcycle tyres
108718L3	3	故障診斷及修正電單車發動機及其配件	Diagnose and Rectify Motorcycle Engine and Component Faults
108719L3		故障診斷及修正電單車底盤系統	Diagnose and Rectify Motorcycle Chassis System Faults
108720L3		故障診斷及修正電單車變速箱及傳動系統	Diagnose and Rectify Motorcycle Transmission and Driveline System Faults
108721L3		故障診斷及修正電單車電氣系統	Diagnose and Rectify Motorcycle Electrical System Faults
111731L3		檢查和大修電單車機械部件	Inspect and overhaul motorcycle mechanical units
111660L3		接待顧客	Attend to customers

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111674L2	2	掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
108707L3	3	診斷及分析各類汽車電子數據控制系統故障	Conduct fault diagnosis and analysis on vehicle electronic data control systems
108814L3		進行技術示範	Conduct demonstration of technical skills

零件銷售員
Parts Salesman

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108590L3	3	執行市場調查計劃	Implement market research plan
108591L3		執行市場推廣計劃	Implement marketing plans
108605L3		執行汽車零部件庫存監控工作	Implement inventory control of vehicle parts
108606L3		執行退貨程序	Carry out the procedure for return of purchase
108607L3		訂購零配件	Order parts and accessories
108620L3		執行零部件採購程序（汽車代理商的零部件採購）	Carry out purchasing procedures for auto parts and accessories (for designated motor agents)
108621L3		執行零部件採購程序（非汽車代理商的零部件採購）	Carry out the purchasing procedure for auto parts and accessories (for non designated motor agents)
108628L3		管理倉庫設施	Manage warehouse facilities
108629L3		執行環保作業要求(零部件管理)	Fulfil the requirements on environmental protection (parts management)
108794L3		管理顧客關係	Manage customer relationship
111660L3		接待顧客	Attend to customers
111775L4	4	汽車業電子商貿	Application of e-commerce in automotive services e-commerce in automotive services

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108603L2	2	執行汽車零部件盤點工作	Participate in motor vehicle parts stocktaking activities
108574L2		銷售汽車配件	Perform sales of vehicle parts and accessories
111658L3	3	高電壓和儲存加壓氣體車輛的處理和儲存風險	Master the risk of handling and storage of high electric voltage and pressurized gas vehicles
108615L4	4	管理汽車零部件庫存文件系統	Manage the documentary system for auto parts and accessories inventory
108796L4		處理顧客投訴	Handle customers' complaints

零件銷售主任
Parts Executive

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108611L3	3	儲存汽車及零部件	Store vehicles, auto parts and accessories
108612L3		處理註銷庫存品	Condemn the inventorial stock
108559L4	4	制定各種付款形式的處理程序	Establish the handling procedures for various kinds of payment methods
108608L4		制定及管理汽車零部件銷售文件系統系統	Establish and manage the documentary system for the sale of auto parts and accessories
108613L4		制定零配件交收及運送程序	Establish the procedures for the receipt, dispatch and delivery of parts and accessories
108614L4		監控零部件運送流程	Monitor the delivery process of parts and accessories
108622L4		甄選零部件供應商	Select suppliers of parts and accessories
108623L4		採購翻新零部件	Purchase renovated parts and accessories
108624L4		制定非原廠零部件適用性的評估方法	Establish methods to assess the applicability of non OEM parts and accessories
108625L4		執行環保採購	Conduct green procurement
108630L4		制定零部件存取程序	Establish the procedure for the storage and retrieval of parts and accessories
108796L4		處理顧客投訴	Handle customers' complaints
108615L4		管理汽車零部件庫存文件系統	Manage the documentary system for auto parts and accessories inventory
111775L4		汽車業電子商貿	Application of e-commerce in automotive services e-commerce in automotive services
108568L4		評核員工工作表現及專業知識	Appraise staff performance and professional knowledge
108569L4		編制員工培訓計劃	Draw up staff training programme
108570L4		安排填補職位空缺	Arrange filling of job vacancies
108806L4		監察職安健管理系統	Monitor occupational safety and health systems
108807L4		監察環保法規及管理	Monitor and manage environmental protection operations
108808L4		制定危險化學品、污染物及廢物管理程序	Formulate management procedure for dangerous chemicals, pollutants and waste

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108557L3	3	運用財務會計	Apply financial accounting techniques
108769L3		判斷汽車在有關法規（交通、環保及道路安全）下使用的合法性	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)
108790L4	4	調查一般工作意外	Investigate typical accidents at work
108616L5	5	制定零部件運送監控系統	Establish the monitoring system for the delivery of parts and accessories
111781L5		執行汽車公司環境、社會和治理 (ESG)	Execute the environmental, social and governance (ESG) for automotive company

零件銷售經理
Parts Manager

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108808L4	4	制定危險化學品、污染物及廢物管理程序	Formulate management procedure for dangerous chemicals, pollutants and waste
108562L5	5	制定財務管理方案	Compile financial reports applicable to the automotive industry
108593L5		制定市場調查計劃	Formulate market research plans
108609L5		制定零部件退貨程序	Establish a procedure for the return of parts and accessories
108616L5		制定零部件運送監控系統	Establish the monitoring system for the delivery of parts and accessories
108617L5		制定庫存品註銷程序	Establish the procedure for stock condemnation
108618L5		制定庫存量的政策	Formulate inventory level policy
108619L5		制定保護存貨的指引	Establish guidelines to protect the stock
108626L5		制定零部件採購策略	Formulate purchasing strategy of parts and accessories
108631L5		設計零部件儲存區	Design the storage zone for parts and accessories
111781L5		執行汽車公司環境、社會和治理 (ESG)	Execute the environmental, social and governance (ESG) for automotive company
108780L5		制定提升員工品質管理意識的計劃	Formulate plans to enhance staff awareness on quality management
108776L5		編制一般品質管理課程	Design quality management courses
108632L6	6	制定汽車零部件倉庫管理策略	Formulate management strategy for auto parts and accessories warehouse

<u>其他建議能力單元</u>

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108560L4	4	執行財務管理	Implement financial management
108568L4		評核員工工作表現及專業知識	Appraise staff performance and professional knowledge
108569L4		編制員工培訓計劃	Draw up staff training programme

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108630L4	4	制定零部件存取程序	Establish the procedure for the storage and retrieval of parts and accessories
111774L4		汽車產業的供應鏈管理	Supply-chain Management in Automotive Industry
111775L4		汽車業電子商貿	Application of e-commerce in automotive services e-commerce in automotive services
108561L5	5	撰寫汽車業財務報告	Compile financial reports applicable to the automotive industry
108775L5		執行一般品質管理稽核	Conduct quality audit
108564L5		制定機構營運管理整體計劃方案	Formulate a comprehensive scheme for organisational operation management
108610L6	6	制定零部件銷售策略	Formulate sales strategy for parts and accessories
108782L6		推行全面品質管理策略	Implement total quality management strategy

總經理
General Manager

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108565L6	6	制定風險管理方案	Formulate risk management plans
108587L6		制定汽車產品銷售策略	Formulate vehicle products sales strategy
108589L6		制定新車採購策略	Formulate purchasing strategy for new vehicles
108595L6		制定市場推廣策略	Formulate marketing strategy
108596L6		建立汽車品牌策略	Formulate brand strategy for vehicles
108610L6		制定零部件銷售策略	Formulate sales strategy for parts and accessories
108781L6		制定企業品質管理政策	Formulate quality management policy
108798L6		制定顧客服務管理策略	Formulate customer service management strategy
108799L6		制定顧客關係管理策略	Formulate customer relation management strategy
108811L6		制定企業整體職安健政策	Formulate comprehensive occupational safety and health policy for the enterprise
108812L6		制定企業整體環保政策	Formulate comprehensive environmental protection policy for the enterprise
108566L7	7	制定企業發展策略	Formulate corporate development strategy

其他建議能力單元：

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108791L5	5	制定設備管理系統	Establish equipment management system
111662L5		制定職安健管理系統	Establish occupational safety and health management system
108810L5		制定環保管理系統	Establish environmental protection management system
108588L6	6	制定汽車產品銷售人員管理策略	Formulate management strategy for salespersons of vehicle products
108632L6		制定汽車零部件倉庫管理策略	Formulate management strategy for auto parts and accessories warehouse
108782L6		推行全面品質管理策略	Implement total quality management strategy
111772L6		制定汽車性能的測試程序	Establish the testing procedure for vehicle performance
111773L6		分析汽車測試結果並評估性能	Analyse the vehicle test result and evaluate the performance

汽車業職業資歷階梯
Vocational Qualifications Pathway for Automotive Industry

汽車維修保養服務
Vehicle Servicing and Maintenance

總經理
General Manager

▲

維修經理
Service Manager

▲

- 意外損毀評估員
  Vehicle Damage Assessor

- 維修顧問 Service Advisor
- 技術員（測試及診斷）
  Technician (Testing and Diagnostic)
- 維修主任（監工/領班）
  Service Executive
  (Supervisor / Foreman)

▲

- 車輛維修技工（機械服務 / 電工服務 / 車身修理 / 車身噴漆）
  Vehicle Mechanic
  (Mechanical / Electrical / Body Repair / Painting)

- 車輛維修技工（電動車）
  Vehicle Mechanic (EV)
- 車輛維修技工（石油氣車輛）
  Vehicle Mechanic
  (LPG Vehicle)

▲

- 汽車業助理 Motor Trade Assistant
- 車身建造技工 Body Building Mechanic
- 助理技工 Assistant Mechanic
- 車輛維修技工（電單車） Vehicle Mechanic (Motorcycle)

汽車業助理
Motor Trade Assistant

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 New UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108567L1	1	認識勞工相關法例	Be familiar with relevant labour regulations
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals and Understand their characteristics
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111663L2	2	識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111666L2		識別電單車系統及零部件的結構與運作原理	Identify the structure and operating principle of motorcycle systems and components
111657L2		運送車輛	Transport vehicles
111776L2		介紹各類型車輛及其配件的特性及相關的產品交易資訊	Introduce the characteristics of different types of vehicles and their accessories, and the product transaction information
108556L2		處理各種形式的付款	Handle various kinds of payment methods
108573L2		銷售汽車	Perform selling of vehicles
108574L2		銷售汽車配件	Perform sales of vehicle parts and accessories
108575L2		提供銷售支援	Provide supporting services to vehicle selling
108576L2		對潛在/目標客戶進行推銷令銷售機會增加	Perform cold calls to potential/target customers to diversify sales opportunities
108577L2		進行產品/服務陳述	Deliver a product or service presentation
108597L2		安排交收及運送汽車	Arrange for acceptance, delivery and transportation of vehicles
108598L2		執行汽車入口的準備工作	Handle preparation work for vehicle importation
108601L2		交收及運送零部件	Accept, deliver and transport parts and accessories
108602L2		辨識/確定零部件	Identify/confirm vehicle parts and accessories
108603L2		執行汽車零部件盤點工作	Participate in motor vehicle parts stocktaking activities
108627L2		存取零部件	Store and retrieve the parts and accessories
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
108813L2		在汽車產業環境中維持良好的工作關係	Maintain Working Relationships in the Motor Vehicle Environment

其他建議能力單元：

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱 Title of Unit of Competency (UoC)	
108675L2	2	摩托車交付前準備和檢查	Motorcycle Pre-delivery Preparation and Inspection
111686L2		交付汽車前的準備及檢查	Pre-delivery Preparation and Inspection of vehicle
111777L3	3	新能源汽車銷售技巧	Sales technique for new energy vehicles
111658L3		高電壓和儲存加壓氣體車輛的處理和儲存風險	Risk of handling and storage of high electric voltage and pressurized gas vehicles
108581L3		安排汽車保險	Arrange for vehicle insurance
108582L3		安排新車交收程序	Arrange receipt, and delivery procedures of imported new vehicles
111660L3		接待顧客	Attend to customers

車身建造技工
Body Building Mechanics

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108757L1	1	使用車身裝嵌的一般物料及工具	Use general materials and tools for vehicle body assembling
108783L1		工作場所內部整理的有關程序	Draw up procedure of housekeeping in motor vehicle environments
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111656L2	2	執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
111663L2		識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111668L2		使用一般焊接設備	Use general welding equipment
108672L2		進行汽車車身部件繫穩作業	Vehicle body parts fastening operation
108758L2		運用基本車身組裝技術	Apply basic vehicle body building techniques
111678L2		組裝車身框架	Build the body frame
111679L2		組裝地板、車窗、通道、梯級及車門	Assemble the floor, windows, passageways, stairs and doors of vehicle
111680L2		組裝座位及內部裝置	Assemble seats and interior fittings
111696L2		在汽車上組裝暖氣、通風及空調系統	Assemble heat, ventilation and air-conditioning (HVAC) systems on vehicles
108763L2		組裝照明及顯示系統	Assemble lighting and indicating systems
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment
111681L2		製作車身夾具	Produce vehicle body building fixtures
111682L2		組裝車身板	Assemble vehicle body panels
111732L3	3	車身焊接	Perform Vehicle body welding
111660L3		接待顧客	Attend to Customers

其他建議能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108695L3	3	監察及保養車身維修儀器及設備	Monitor and maintain instruments and equipment
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste
108769L3		判斷汽車在有關法規（交通、環保及道路安全）下使用的合法性	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)
108814L3		進行技術示範	Conduct demonstration of technical skills

助理技工
Asistant Mechanic

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108634L1	1	使用一般汽車維修工具和設備	Employ general vehicle servicing tools and equipment
108637L1		更換車身金屬板及配件	Replace metallic panels and accessories of vehicle body
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
108783L1		工作場所內部整理的有關程序	Draw up procedure of housekeeping in motor vehicle environments
108801L1		應用環保法規及管理系統	Apply the laws and regulations and management system of environmental protection
111688L2	2	為修護電氣化車輛高壓電系統工作進行安全設置	Conduct safety setup for the service of the high-voltage electrical system of electrified vehicles
111690L2		識別電動車的基本原理	Identify the fundamentals of electrified vehicles
111665L2		拆卸、檢查及更換汽車低壓電氣系統及配件	Dismantle, inspect and replace the low-voltage vehicle electrical systems and accessories
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
111663L2		瞭解汽車和組件的結構及工作原理	Identify the structure and operating principle of vehicle systems and components
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111664L2		拆卸、更換和重裝汽車系統組件	Dismantle, replace and re-assemble vehicle system components
111685L2		進行汽車的日常維護	Carry out Routine Vehicle Maintenance
111668L2		使用一般焊接設備	Use general welding equipment
111684L2		檢修及更換輪胎	Check, repair and replace tyres
111691L2		檢查及維修汽車的傳動和底盤系統	Check and repair vehicle transmission and under-chassis systems
108655L2		檢修汽車電子控制系統及設備	Check and repair vehicle electronic control systems and devices
108657L2		拆裝門窗及組件	Dismantle and install the windows and doors as well as their components
108659L2		檢修座位及內部裝置	Check and repair vehicle seats and interior fittings
108663L2		使用及維護一般噴塗設備	Use and maintain general painting equipment

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111671L2	2	去除舊漆膜及金屬表面處理	Remove paint and process surface treatment on metallic panel
111673L2		進行車身貼紙及噴塗(包括塑料)工序	Carry out vehicle body masking and painting (include plastic components) process
111686L2		交付汽車前的準備及檢查	Pre-delivery Preparation and Inspection of vehicle
111687L2		拆卸和更換汽車發動機單元及零部件	Remove and replace vehicle engine units and components
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108660L2	2	檢查及修補車身玻璃纖維板	Check and mend the glass fibre panels of vehicle body
111732L3	3	車身焊接	Perform Vehicle body welding
111700L3		電動汽車高壓電力系統的斷電和復電	Isolate and reinstate the high-voltage electrical system of electrified vehicles
111778L3		安排顧客測試車輛	Arrange vehicle test drives for customers' interests
111727L3		檢修汽車各類燃料供應系統	Check and repair various types of fuel supply systems
111734L3		診斷及修復故障的汽車引擎和組件	Diagnose and rectify the faulty vehicle engine and components
111722L3		診斷及修復車輛傳動系統的故障	Diagnose and rectify vehicle drivetrain faults
111718L3		維護各種車輛維修工具和設備	Maintain various vehicle servicing tools and equipment
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste

車輛維修技工（電單車）
Vehicle Mechanic (Motorcycle)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111666L2	2	識別電單車系統及零部件的結構與運作原理	Identify the structure and operating principle of motorcycle systems and components
108674L2		進行定期電單車保養	Carry out Routine Motor Motorcycle Maintenance
108675L2		進行電單車交車準備及檢查	Carry Out Motorcycle Pre-delivery Preparation and Inspections
108676L2		拆卸更換電單車發動機動力傳動裝置及部件	Remove and Replace Motorcycle Engine Power-train Units and Components
108677L2		拆卸、更換電單車電器裝置及部件	Remove and replace motorcycle electrical units and components
108678L2		拆卸、更換電單車底盤裝置及部件	Remove and replace motorcycle chassis units and components
108679L2		拆卸、更換電單車傳動裝置及部件	Remove and replace motorcycle driveline units and components
111656L2		執行職安健作業指引	Carry out the operation guidelines on occupational safety and health
108813L2		能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment
111689L2		拆卸和更換電單車動力總成及相關零部件	Remove and replace motorcycle powertrain and associated components
108681L2		檢查、修理及更換電單車輪胎	Inspect, repair and replace motorcycle tyres
108718L3	3	故障診斷及修正電單車發動機及其配件	Diagnose and Rectify Motorcycle Engine and Component Faults
108719L3		故障診斷及修正電單車底盤系統	Diagnose and Rectify Motorcycle Chassis System Faults
108720L3		故障診斷及修正電單車變速箱及傳動系統	Diagnose and Rectify Motorcycle Transmission and Driveline System Faults
108721L3		故障診斷及修正電單車電氣系統	Diagnose and Rectify Motorcycle Electrical System Faults
111731L3		檢查和大修電單車機械部件	Inspect and overhaul motorcycle mechanical units
111660L3		接待顧客	Attend to customers

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111674L2	2	掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
108707L3	3	診斷及分析各類汽車電子數據控制系統故障	Conduct fault diagnosis and analysis on vehicle electronic data control systems
108814L3		進行技術示範	Conduct demonstration of technical skills

車輛維修技工〔機械服務〕
Vehicle Mechanic (Mechanical Services)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111655L1	1	識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
111663L2	2	識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111664L2		拆卸、更換和重裝汽車系統組件	Dismantle, replace and re-assemble vehicle system components
111684L2		檢修及更換輪胎	Check, repair and replace tyres
111691L2		檢查及維修汽車的傳動和底盤系統	Check and repair vehicle transmission and under-chassis systems
108655L2		檢修汽車電子控制系統及設備	Check and repair vehicle electronic control systems and devices
111695L2		汽車安全的監管合規檢測	Vehicle safety inspection for regulatory compliance
111778L3	3	安排顧客測試車輛	Arrange vehicle test drives for customers' interests
111728L3		大修內燃機	Overhaul internal combustion engine
111727L3		檢修汽車各類燃料供應系統	Check and repair various types of fuel supply systems
111725L3		診斷內燃機車輛的各類液體燃料供應系統故障	Diagnose various faulty liquid fuel supply systems of combustion engine vehicles
111734L3		診斷及修復故障的汽車引擎和組件	Diagnose and rectify the faulty vehicle engine and components
111735L3		診斷及修復車輛底盤系統的故障	Diagnose and rectify the faulty vehicle under-chassis systems
111722L3		診斷及修復車輛傳動系統的故障	Diagnose and rectify vehicle drivetrain faults
108701L3		測試和報告車輛行駛狀況	Test drive and report the condition of vehicles
111718L3		維護各種車輛維修工具和設備	Maintain various vehicle servicing tools and equipment
111724L3		進行車輛檢測專用設備及儀器修護	Conduct maintenance for special equipment and instruments for vehicle inspection
111736L3		安排汽車檢驗	Arrange vehicle examination
111723L3		為同事提供車輛維修技術的技術支援和建議	Provide technical support and advice to colleagues for vehicle repair techniques
108747L3		提供維修建議及諮詢服務	Offer servicing advice and consulting services
108769L3		判斷汽車在有關法規（交通、環保及道路安全）下使用的合法性	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108788L3	3	處理一般工作意外	Handle general accidents at work
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste
108804L3		執行環保作業要求(機電維修)	Fulfil the requirements on environmental protection (electrical and mechanical servicing)
108814L3		進行技術示範	Conduct demonstration of technical skills
108787L3		控制維修車輛的流程	Control vehicle servicing workflow
111745L4	4	檢修汽車智能控制系統及設備	Check and repair vehicle intelligent control systems and devices

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108813L2	2	能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment
111707L3	3	使用專用設備檢查車輛的道路適用性	Examine the roadworthiness of vehicle with specific equipment
111660L3		接待顧客	Attend to customers
111729L3		大修傳動機構	Overhaul the drivetrain mechanism
111658L3		高電壓和儲存加壓氣體車輛的處理和儲存風險	Master the risk of handling and storage of high electric voltage and pressurized gas vehicles

車輛維修技工〔電工服務〕
Vehicle Mechanic (Electrical Services)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111655L1	1	識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
111663L2	2	識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111667L2		檢查及維修內燃機車輛的低壓電池、充電及起動系統	Check and repair the low-voltage battery, charging and starting systems of combustion engine vehicles
111675L2		檢查及修復車載低壓電器系統	Check and repair the low-voltage electrical systems onboard
108655L2		檢修汽車電子控制系統及設備	Check and repair vehicle electronic control systems and devices
111730L3	3	檢查和維修汽車空調系統零部件	Check and repair vehicle air-conditioning system components
111718L3		維護各種車輛維修工具和設備	Maintain various vehicle servicing tools and equipment
111704L3		進行內燃機汽車低壓電池、充電和起動系統的故障診斷和維修	Conduct fault diagnosis and repair on the low-voltage battery, charging and starting systems of combustion engine vehicles
111733L3		對車載低壓電氣系統進行故障診斷	Conduct fault diagnosis on the low-voltage electrical systems onboard
108707L3		診斷及分析各類汽車電子數據控制系統故障	Conduct fault diagnosis and analysis on vehicle electronic data control systems
111719L3		進行各類車輛暖氣、通風及空調系統的故障診斷與排除	Conduct fault diagnosis and rectification of the heating, ventilation and air conditioning (HVAC) system of various vehicle types
111724L3		進行車輛檢測專用設備及儀器修護	Conduct maintenance for special equipment and instruments for vehicle inspection
111723L3		為同事提供車輛維修技術的技術支援和建議	Provide technical support and advice to colleagues for vehicle repairing techniques
108747L3		提供維修建議及諮詢服務	Offer servicing advice and consulting services
108769L3		判斷汽車在有關法規（交通、環保及道路安全）下使用的合法性	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)
108788L3		處理一般工作意外	Handle general accidents at work

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108804L3	3	執行環保作業要求(機電維修)	Fulfil the requirements on environmental protection (electrical and mechanical servicing)
108814L3		進行技術示範	Conduct demonstration of technical skills
111778L3		安排顧客測試車輛	Arrange vehicle test drive for customers' interests
111736L3		安排汽車檢驗	Arrange vehicle examination
108787L3		控制維修車輛的流程	Control vehicle servicing workflow

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111696L2	2	在汽車上組裝暖氣、通風及空調系統	Assemble heat, ventilation and air-conditioning (HVAC) systems on vehicles
111698L3	3	進行電動汽車低壓電氣系統的維護與檢查作業	Maintenance and inspection of low-voltage electrical systems on electrified vehicle
111717L3		拆卸和維修電動化車輛的無線網路、通用封包無線服務和各種感應器	Dismantle and repair the Wireless Fidelity (Wi-Fi), General Packet Radio Service (GPRS) and various sensors for electrified vehicles
108728L3		為顧客提供診斷上的諮詢	Conduct diagnostic consultations with customers
111658L3		高電壓和儲存加壓氣體車輛的處理和儲存風險	Master the risk of handling and storage of high electric voltage and pressurized gas vehicles
111745L4	4	檢修汽車智能控制系統及設備	Check and repair vehicle intelligent control systems and devices

車輛維修技工〔車身修理〕
Vehicle Mechanic (Body Repair)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108637L1	1	更換車身金屬板及配件	Replace metallic panels and accessories of vehicle body
111655L1		識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
111668L2	2	使用一般焊接設備	Use general welding equipment
111674L2		掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing
111732L3		車身焊接	Perform Vehicle body welding
108657L2		拆裝門窗及組件	Dismantle and install the windows and doors as well as their components
111669L2		檢修前後擋風玻璃	Check and repair front and rear windscreens
108659L2		檢修座位及內部裝置	Check and repair vehicle seats and interior fittings
111670L2		檢查及修補車身金屬板	Check and mend the metallic panels of vehicle body
108662L2		量度車身和底盤	Measure vehicle body and chassis
111778L3	3	安排顧客測試車輛	Arrange vehicle test drive for customers' interests
108695L3		監察及保養車身維修儀器及設備	Monitor and maintain instruments and equipment
111711L3		應用電子儀器量度車身/底盤	Measure vehicle body/chassis with specialised electronic instruments
111712L3		修正大型結構性的損毀	Rectify large-scale structural damages
111713L3		檢查及維修鋁合金車身	Check and repair aluminium alloy vehicle body
111736L3		安排汽車檢驗	Arrange vehicle examination
111723L3		對同事提供汽車維修技術支援及建議	Provide technical support and advice to colleagues for vehicle repairing techniques
108747L3		提供維修建議及諮詢服務	Offer servicing advice and consulting services
108769L3		判斷汽車在有關法規（交通、環保及道路安全）下使用的合法性	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)
108787L3		控制維修車輛的流程	Control vehicle servicing workflow
108788L3		處理一般工作意外	Handle general accidents at work
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste
108805L3		執行環保作業要求(車身維修)	Fulfil the requirements on environmental protection (vehicle body servicing)
108814L3		進行技術示範	Conduct demonstration of technical skills
108739L4	4	掌握車身及車架複雜技術	Master the complicated techniques of vehicle body and frame

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108660L2	2	檢查及修補車身玻璃纖維板	Check and mend the glass fibre panels of vehicle body

車輛維修技工〔車身噴漆〕
Vehicle Mechanic (Body Painting)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111655L1	1	識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage
108663L2	2	使用及維護一般噴塗設備	Use and maintain general painting equipment
111671L2		去除舊漆膜及金屬表面處理	Remove paint and process surface treatment on metallic panel
111672L2		進行填灰及研磨工序	Carry out body filling and sanding
111673L2		進行車身貼紙及噴塗(包括塑料)工序	Carry out vehicle body masking and painting (include plastic components) process
111721L3	3	調配漆油	Mix paints
111714L3		掌握駁口噴塗處理技術	Master the techniques of blending
111715L3		修補面漆	Remedy paint defects (spot painting)
111716L3		界定汽車車身漆膜的缺失	Defining defects of paint coating
111723L3		為同事提供汽車維修技術支援及建議	Provide technical support and advice to colleagues for vehicle repairing techniques
108747L3		提供維修建議及諮詢服務	Offer servicing advice and consulting services
108787L3		控制維修車輛的流程	Control vehicle servicing workflow
108788L3		處理一般工作意外	Handle general accidents at work
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste
108805L3		執行環保作業要求(車身維修)	Fulfil the requirements on environmental protection (vehicle body servicing)
108814L3		進行技術示範	Conduct demonstration of technical skills

其他建議能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108669L2	2	護理車身(包括打蠟)及車廂	Car detailing and waxing work

車輛維修技工〔電動車〕
Vehicle Mechanic (EV)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)	備註
111692L2	2	了解電動車維修工作的安全	Appreciate the safety precautions in the maintenance work for electric vehicle	EVE
111693L2	2	認識電動車高壓系統的結構和工作原理及相關的安全意識	Identify the structure and operating principles of the high-voltage systems of electric vehicle and the associated safety awareness	EVL
111737L3	3	執行電動車系統的維護程序	Execute the maintenance procedures for electric vehicle systems	
111738L3		執行電動車高電壓系統的診斷和修復程序及相關的安全措施	Execute the diagnostic and remedial procedures for the high-voltage systems of electric vehicle and the associated safety measures	
111739L3	3	熟悉電動車技術及相關操作風險	Familiar with electric vehicle technology and the associated risk handling	EVH
111766L4	4	分析電動車系統故障並執行復修程序	Analyse the electric vehicle system faults and execute the rectifying procedures	
111694L2	2	辨識電動電單車高壓系統的結構和工作原理及相關安全意識	Identify the structure and operating principles of the high-voltage systems of electric motorcycles and the associated safety awareness	EVM
111740L3	3	執行電動電單車系統的維護和診斷程序	Execute the maintenance and diagnostic procedures for electric motorcycle systems	
111741L3		評估電動電單車的高壓作業系統性能並執行充電儲能系統的維護程序	Evaluate the performance of high-voltage operating systems and execute the maintenance procedures for the rechargeable energy storage system of electric motorcycles	

電動車系統之核心能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)	備註
111699L3	3	檢查及維修電動汽車的機械故障與損壞	Check and repair mechanical breakdown and damage on electrified vehicles	---
111700L3		電動汽車高壓電力系統的斷電和復電	Isolate and reinstate the high-voltage electrical system of electrified vehicles	---
111705L3		維護及修理非帶電的電動化車輛系統	Maintain and repair the non-live electrified vehicle systems	---
111701L3		分解、維修及組裝電動車的牽引電機	Dismantle, repair and assemble the traction motors of electrified vehicles	---
111702L3		檢查及維修電動車的空調、冷卻及動力轉向系統	Check and repair the air-conditioning, cooling and power steering systems of electrified vehicles	---
111744L4	4	診斷電動車驅動控制系統的故障	Conduct fault diagnosis on the propulsion control systems of electrified vehicles	---
111748L4		拆卸及更換車載高壓電池	Remove and replace the vehicle high-voltage batteries onboard	---

電動車系統之其他建議能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)	備註
108813L2	2	能與同事維繫良好工作關係	Maintain Working Relationships in the Motor Vehicle Environment	---
111688L2		為修護電氣化車輛高壓電系統工作進行安全設置	Conduct safety setup for the service of the high-voltage electrical system of electrified vehicles	---
111690L2		識別電動車的基本原理	Master the fundamentals of electrified vehicles	---
111660L3	3	接待顧客	Attend to customers	---
111719L3		進行各類車輛暖氣、通風及空調系統的故障診斷與排除	Conduct fault diagnosis and rectification of the heating, ventilation and air conditioning (HVAC) system on vehicles	---
111703L3		拆卸與更換電動車牽引電機及其相關組件	Removal, replacement and test of the traction motor and associated components of electrified vehicles	---
111658L3		高電壓和儲存加壓氣體車輛的處理和儲存風險	Master the risk of handling and storage of high electric voltage and pressurized gas vehicles	---
111757L4	4	掌握電氣和電子系統的複雜技術	Master the complicated techniques of electrical and electronic systems	---
111746L4		處理故障或受損電動車的風險評估、應急救援及補救措施	Risk assessment, emergency rescue and remedy actions for handling breakdown and damaged electrified vehicles	---
111747L4		檢測電動車輛可充電儲能系統的性能	Conduct the performance check of Rechargeable Energy Storage System (REESS) on electrified vehicles	---

電動電單車系統之核心能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)	備註
111706L3	3	電動電單車可充電儲能系統、充電及驅動系統的拆卸、檢查與更換	Removal, checking and replacement of propulsion system of electric motorcycle	---
111709L3		進行電動電單車驅動及動力控制系統的故障診斷	Diagnose and rectify electric motorcycle propulsion system faults	---
111658L3		高電壓和儲存加壓氣體車輛的處理和儲存風險	Master the risk of handling and storage of high electric voltage and pressurized gas vehicles	---
111748L4	4	拆卸及更換車載高壓電池	Remove and replace the vehicle high-voltage batteries onboard	---
111757L4		掌握電氣和電子系統的複雜技術	Master the complicated techniques of electrical and electronic systems	---
111746L4		處理故障或受損電動車的風險評估、應急救援及補救措施	Risk assessment, emergency rescue and remedy actions for handling breakdown and damaged electrified vehicles	---
111747L4		檢測電動車輛可充電儲能系統的性能	Conduct the performance check of Rechargeable Energy Storage System (REESS) on electrified vehicles	---

電動電單車系統之其他建議能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)	備註
111688L2	2	為修護電氣化車輛高壓電系統工作進行安全設置	Conduct safety setup for the service of the high-voltage electrical system of electrified vehicles	---
111690L2		識別電動車的基本原理	Master the fundamentals of electrified vehicles	---
111700L3	3	電動汽車高壓電力系統的斷電和復電	Isolate and reinstate the high-voltage electrical system of electrified vehicles	---

氫燃料電池系統之能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)	備註
111677L2	2	維修車載加壓氣體燃料系統工作的安全設置	Conduct safety setup for the service of the pressurized gaseous fuel systems on vehicles	---
111708L3	3	對電動化汽車的氫燃料電池系統進行日常維護	Carry out routine maintenance for the hydrogen fuel cell system on electrified vehicle	---

車輛維修技工〔石油氣車輛〕
Vehicle Mechanic (LPG Vehicle)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111683L2	2	拆卸、檢查及維修車載液化石油氣系統元件	Dismantle, inspect and repair the components of liquefied petroleum gas systems
111677L2		維修車載加壓氣體燃料系統工作的安全設置	Conduct safety setup for the service of the pressurized gaseous fuel systems on vehicles
111658L3	3	高電壓和儲存加壓氣體車輛的處理和儲存風險	Master the risk of handling and storage of high electric voltage and pressurized gas vehicles
111726L3		進行液化石油氣系統的驅氣程序以拆卸其零部件	Conduct fuel purging procedures for component dismantling on liquefied petroleum gas vehicles
111710L3		對各類車輛液化石油氣供應及控制系統進行故障診斷	Conduct fault diagnosis on various liquefied petroleum gas supply and control systems of vehicles

其他建議之能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111761L4	4	對車用液化石油氣缸的合法性和適用性進行重新驗證	Conduct revalidation process for the legality and serviceability of vehicular liquefied petroleum tank
111762L4		掌握複雜的廢氣排放測試技術	Master the complicated techniques of exhaust emission tests
111763L4		掌握液化石油氣汽車燃料供給系統的複雜技術	Master the complicated techniques of the fuel supply system on liquefied petroleum gas vehicles

汽車維修顧問
Service Advisor

能力單元列表
List of Unit of Competency (UoC)

新能力單元編號 New UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108747L3	3	提供維修建議及諮詢服務	Offer servicing advice and consulting services
111720L3		執行保險索償的維修報價工作	Execute the work on the repair quotation for insurance claims
108750L3		推廣維修銷售及顧問服務	Promote repair/maintenance services and provide advice on vehicle services
108753L3		提供汽車估值及折舊貼換交易服務	Provide services on value assessment and trade-in of vehicles
111752L4	4	核實車輛保險理賠個案	Verify cases of vehicle insurance claims
111764L4		估算車輛意外損毀的維修費用	Estimate the repair cost for accidental damage of vehicles
108772L4		監控維修工序質素	Monitor the quality of servicing work
108795L4		管理顧客服務	Manage customer services
108796L4		處理顧客投訴	Handle customers' complaints

其他建議能力單元

新能力單元編號 New UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108590L3	3	執行市場調查計劃	Implement market research plan
108701L3		測試和報告車輛行駛狀況	Test drive and report the condition of vehicles
108794L3		管理顧客關係	Manage customer relationship
111660L3		接待顧客	Attend to customers
111659L3		處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste
111775L4	4	汽車業電子商貿	Application of e-commerce in automotive services
111746L4		處理故障或受損電動車的風險評估、應急救援及補救措施	Risk assessment, emergency rescue and remedy actions for handling breakdown and damaged electrified vehicles

車輛維修技術員〔測試及診斷〕
Technician (Testing and Diagnostics)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111748L4	4	拆卸及更換車載高壓電池	Remove and replace the vehicle high-voltage batteries onboard
111745L4		檢修汽車智能控制系統及設備	Check and repair vehicle intelligent control systems and devices
111744L4		診斷電動車驅動控制系統的故障	Conduct fault diagnosis on the propulsion control systems of electrified vehicles
111750L4		掌握內燃機汽車動力系統的複雜技術	Master complicated techniques of the power systems on combustion engine vehicles
111756L4		掌握傳動系統的複雜技術	Master the complicated techniques of transmission systems
111754L4		掌握底盤穩定控制的複雜技術	Master the complicated techniques of chassis stability control
108736L4		掌握轉向的複雜技術	Master the complicated techniques of steering
111755L4		掌握懸掛系統的複雜技術	Master the complicated techniques of suspension systems
111757L4		掌握電氣和電子系統的複雜技術	Master the complicated techniques of electrical and electronic systems
108740L4		審核汽車檢驗品質	Conduct quality check on vehicle examination
111758L4		掌握混合動力汽車動力系統的複雜技術	Master the complicated techniques of the power system on hybrid electric vehicles
111759L4		掌握電動車動力系統的複雜技術	Master the complicated techniques of the power system on battery electric vehicles
111760L4		掌握氫燃料電池電動車動力系統複雜技術	Master the complicated techniques of the power system on hydrogen fuel cell electric vehicles
111765L4		診斷和修復車輛廢氣排放控制系統	Diagnose and rectify vehicle exhaust emission control systems
111751L4		執行車輛的性能測試	Execute performance tests on vehicles
111747L4		檢測電動車輛可充電儲能系統的性能	Conduct the performance check of Rechargeable Energy Storage System (REESS) on electrified vehicles
111761L4		對車用液化石油氣缸的合法性和適用性進行重新驗證	Conduct revalidation process for the legality and serviceability of vehicular liquefied petroleum tank
111762L4		掌握複雜的廢氣排放測試技術	Master the complicated techniques of exhaust emission tests
108751L4		處理複雜維修技術問題	Handle complicated technical servicing problems
108773L4		初步分析工序失誤	Conduct preliminary analysis on procedural deficiencies
111767L5	5	診斷、測試及維修電動車高壓電池	Diagnose, test and repair vehicle high-voltage batteries

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111725L3	3	診斷內燃機車輛的各類液體燃料供應系統故障	Diagnose various faulty liquid fuel supply systems of combustion engine vehicles
111733L3		對車載低壓電氣系統進行故障診斷	Conduct fault diagnosis on the low-voltage electrical systems onboard
111723L3		為同事提供車輛維修技術的技術支援和建議	Provide technical support and advice to colleagues for vehicle repairing techniques
108727L3		與產品製造商作技術上的聯繫	Liaise with vehicle and product manufacturers on technical matters
108728L3		為顧客提供診斷上的諮詢	Conduct diagnostic consultations with customers in vehicle environments
111707L3		使用專用設備檢查車輛的道路適用性	Examine the roadworthiness of vehicle with specific equipment
111749L4	4	為汽車維修工序進行風險評估	Conduct risk assessment on vehicle servicing work
108790L4		調查一般工作意外	Investigate typical accidents at work
111746L4		處理故障或受損電動車的風險評估、應急救援及補救措施	Risk assessment, emergency rescue and remedy actions for handling breakdown and damaged electrified vehicles
111769L5	5	優化汽車系統性能	Optimise the performance of vehicle systems

維修主任 (工場經理，監工，領班)
Service Executive (Workshop Manager, Supervisor, Foreman)

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108727L3	3	與產品製造商作技術上的聯繫	Liaise with vehicle and product manufacturers on technical matters
108730L4	4	制定汽車維修工作安全守則	Formulate rules of safety operation for vehicle servicing work
111749L4		為汽車維修工序進行風險評估	Conduct risk assessment on vehicle servicing work
108732L4		監察安排及協調工場運作進度及流程	Monitor, arrange and coordinate the progress and workflow of the operation in the workshop
108740L4		審核汽車檢驗品質	Conduct quality check on vehicle examination
108751L4		處理複雜維修技術問題	Handle complicated technical servicing problems
108795L4		管理顧客服務	Manage customer services
108796L4		處理顧客投訴	Handle customers' complaints
108806L4		監察職安健管理系統	Monitor occupational safety and health systems
108807L4		監察環保法規及管理	Monitor and manage environmental protection operation
108808L4		制定危險化學品、污染物及廢物管理程序	Formulate management procedure for dangerous chemicals, pollutants and waste
108772L4		監控維修工序質素	Monitor the quality of servicing work
108790L4		調查一般工作意外	Investigate typical accidents at work
111746L4		處理故障或受損電動車的風險評估、應急救援及補救措施	Risk assessment, emergency rescue and remedy actions for handling breakdown and damaged electrified vehicles

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108748L3	3	處理售後保用服務	Handle after-sales warranty claim
108695L3		監察及保養儀器及設備	Monitor and maintain instruments and equipment
111707L3		使用專用設備檢查車輛的道路適用性	Examine the roadworthiness of vehicle with specific equipment
111758L4	4	掌握混合動力汽車動力系統的複雜技術	Master the complicated techniques of the power system on hybrid electric vehicles
111759L4		掌握電動車動力系統的複雜技術	Master the complicated techniques of the power system on battery electric vehicles
111760L4		掌握氫燃料電池電動車動力系統複雜技術	Master the complicated techniques of the power system on hydrogen fuel cell electric vehicles

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111769L5	5	優化汽車系統性能	Optimise the performance of vehicle systems
111768L5		優化電動車動力系統的性能	Optimise the performance of power systems on electrified vehicles
111770L5		建立和維護各類型車輛的汽車維修工場	Set up and maintain vehicle service workshop for various vehicle types
111771L5		分析點燃式內燃機的排放測試結果	Analyse the emission test results of spark ignition internal combustion engines

意外損毀評估員
Vehicle Damage Assessor

能力單元列表 (建議更新本)
List of Unit of Competency (UoC) (Suggested Updating Version)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108769L3	3	判斷汽車在有關法規（交通、環保及道路安全）下使用的合法性	Judge the legitimacy of vehicle usage under laws and regulations (traffic, environmental protection and road safety)
111746L4	4	處理故障或受損電動車的風險評估、應急救援及補救措施	Risk assessment, emergency rescue and remedy actions for handling breakdown and damaged electrified vehicles
111752L4		核實汽車保險索償個案	Verify cases of vehicle insurance claims
111753L4		協調汽車損毀的保險索償	Coordinate insurance claims of vehicle damage
111764L4		估算車輛意外損毀的維修費用	Estimate the repair cost for accidental damage of vehicles
108795L4		管理顧客服務	Manage customer services

其他建議能力單元

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111663L2	2	識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components
111690L2		識別電動車的基本原理	Identify the fundamentals of electrified vehicles
108753L3	3	提供汽車估值及折舊貼換交易服務	Provide services on value assessment and trade-in of vehicles
111720L3		執行保險索償的維修報價工作	Execute the work on the repair quotation for insurance claims
108773L4	4	初步分析工序失誤	Conduct preliminary analysis on procedural deficiencies

維修經理
Service Manager

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108563L5	5	評估營運場所工作意外的風險	Assess the risks of accident at work within the workplace
108791L5		制定設備管理系統	Establish equipment management system
111661L5		制定維修工場的管理系統	Establish management system for servicing workshops
111662L5		制定職安健管理系統	Establish occupational safety and health management system
108810L5		制定環保理系統	Establish environmental protection management system
108752L5		聯繫汽車製造商及外地機構作業務及技術交流	Contact vehicle manufacturers and overseas organisations for business and technical exchange
108774L5		撰寫一般品檢報告	Compile report on quality issues
108776L5		編制一般品質管理課程	Design quality management courses
108777L5		執行國際標準化組織(ISO)品質管理標準	Implement the ISO quality management standard
108778L5		執行汽車製造商指定的品質管理標準	Implement the quality management standard specified by the vehicle manufacturer
108780L5		制定提升員工品質管理意識的計劃	Formulate plans to enhance staff awareness on quality management
108797L5		制定顧客服務計劃	Formulate customer services plan
108782L6	6	推行全面品質管理策略	Implement total quality management strategy

其他建議能力單元

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108568L4	4	評核員工工作表現及專業知識	Appraise staff performance and professional knowledge
108569L4		編制員工培訓計劃	Draw up staff training programme
108771L4		協調落實品質管理系統	Coordinate and implement quality management systems
108766L4		提供車身裝嵌報價	Provide quotation for vehicle body building work
108789L4		制定車輛的存放、流程控制及保安程序	Establish procedures for parking, flow control and security of vehicles
108562L5	5	制定財務管理方案	Compile financial reports applicable to the automotive industry
108564L5		制定機構營運管理整體計劃方案	Formulate a comprehensive scheme for organisational operation management
108571L5		評估人力市場及確立薪酬制度	Assess human resources market and establish remuneration system

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108767L5	5	設計貨車載貨廂	Design the loading compartments of trucks
108768L5		設計客車車廂	Design the carriages of passenger vehicles
108779L5		制定顧客服務計劃	Implement quality management training courses
108799L6	6	制定顧客關係管理策略	Formulate customer relation management strategy
111772L6		制定汽車性能的測試程序	Establish the testing procedure for vehicle performance

總經理
General Manager

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108565L6	6	制定風險管理方案	Formulate risk management plans
108587L6		制定汽車產品銷售策略	Formulate vehicle products sales strategy
108589L6		制定新車採購策略	Formulate purchasing strategy for new vehicles
108595L6		制定市場推廣策略	Formulate marketing strategy
108596L6		建立汽車品牌策略	Formulate brand strategy for vehicles
108610L6		制定零部件銷售策略	Formulate sales strategy for parts and accessories
108781L6		制定企業品質管理政策	Formulate quality management policy
108798L6		制定顧客服務管理策略	Formulate customer service management strategy
108799L6		制定顧客關係管理策略	Formulate customer relation management strategy
108811L6		制定企業整體職安健政策	Formulate comprehensive occupational safety and health policy for the enterprise
108812L6		制定企業整體環保政策	Formulate comprehensive environmental protection policy for the enterprise
108566L7	7	制定企業發展策略	Formulate corporate development strategy

其他建議能力單元：

能力單元編號 UoC Code	資歷級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
108791L5	5	制定設備管理系統	Establish equipment management system
111662L5		制定職安健管理系統	Establish occupational safety and health management system
108810L5		制定環保管理系統	Establish environmental protection management system
108588L6	6	制定汽車產品銷售人員管理策略	Formulate management strategy for salespersons of vehicle products
108632L6		制定汽車零部件倉庫管理策略	Formulate management strategy for auto parts and accessories warehouse
108782L6		推行全面品質管理策略	Implement total quality management strategy
111772L6		制定汽車性能的測試程序	Establish the testing procedure for vehicle performance
111773L6		分析汽車測試結果並評估性能	Analyse the vehicle test result and evaluate the performance

汽車業職業資歷階梯
Vocational Qualifications Pathway for Automotive Industry

車輛檢驗及檢控

Vehicle Inspection and Prosecution

汽車檢驗主任職系

透過運輸署內部晉升階梯，
晉升為更高級別汽車檢驗主任

▲

二級汽車檢驗主任
Motor Vehicle Examiner II

▲

車輛檢驗員
Vehicle Tester

車輛檢驗員
Vehicle Tester

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111654L3	3	進行車輛的道路適用性檢驗	Carry out roadworthiness inspection for vehicles
111646L3	3	處理車輛檢驗文件	Handle the documents for vehicle inspection
111647L3	3	應用本地有關環境保護、道路及車輛安全和職業安全與健康的法規於車輛檢驗及相關風險的處理	Apply the local regulations on environmental protection, road and vehicle safety, and occupational safety and health for vehicle examinations and associated risk handling
111648L3	3	應用專用設施和設備進行車輛檢查及進行有關的基本維護	Apply specialised facilities and equipment for vehicle inspection and conduct associated basic maintenance
111653L4	4	根據道路安全和環境保護相關的法規和條例，判斷車輛運作的合法性	Judge the legitimacy of vehicle operation under rules and regulations relating to road safety and environmental protection

二級汽車檢驗主任
Motor Vehicle Examiner II

能力單元列表
List of Unit of Competency (UoC)

能力單元編號 UoC Code	資歷 級別 QF Level	能力單元名稱	Title of Unit of Competency (UoC)
111649L4	4	對各類型車輛進行法定的道路適用性檢驗，並核實相關文件的合規性	Conduct statutory roadworthiness inspections for various types of vehicles and verify the compliance of associated documents
111650L4	4	調查車輛的事故原因	Investigate the causes of the vehicle accident
111651L4	4	處理車輛檢驗相關的申訴和投訴	Handle vehicle examination-related appeals and complaints
111652L4	4	執行車輛檢驗的營運與品質管理	Execute the operations and quality management in vehicle examination

Chapter III

List of Unit of Competency for Automotive Industry

Unit of Competency	Code	Level	Credit	Page No.
Sales and Marketing				
Perform sales of vehicles	108573L2	2	6	91
Perform sales of vehicle parts and accessories	108574L2	2	6	93
Provide supporting services to vehicle sales	108575L2	2	3	95
Promote to potential/target customers to increase sales opportunities	108576L2	2	3	96
Deliver a product or service presentation	108577L2	2	3	97
Arrange for delivery and transportation of vehicles	108597L2	2	3	98
Handle preparation work for vehicle importation	108598L2	2	3	100
Introduce the characteristics of different types of vehicles and their accessories, and the product transaction information	111776L2	2	3	210
Implement sales plan for vehicle products	108579L3	3	3	215
Arrange financial loan for vehicles	108580L3	3	3	216
Arrange for vehicle insurance	108581L3	3	3	218
Arrange receipt and delivery procedures of imported new vehicles	108582L3	3	3	220
Implement market research plan	108590L3	3	3	222
Implement marketing plans	108591L3	3	3	223
Sales Techniques for New Energy Vehicles	111777L3	3	4	384
Arrange vehicle test drives for customers' interests	111778L3	3	3	386
Purchase new vehicles	108584L4	4	3	396
Formulate marketing plans	108592L4	4	6	398
Establish procedures for the receipt, dispatch and delivery of vehicles	108599L4	4	3	400
Exhibit / Display vehicles	111779L4	4	3	515
Purchase used vehicles	111780L4	4	3	517
Formulate sales estimates of vehicle products	108585L5	5	6	529
Formulate marketing plans for vehicle products	108586L5	5	6	531
Formulate market research plans	108593L5	5	6	533
Write promotion script for the marketing of vehicle products	108594L5	5	6	535
Formulate vehicle products sales strategy	108587L6	6	6	588
Formulate management strategy for salespersons of vehicle products	108588L6	6	6	590

Unit of Competency	Code	Level	Credit	Page No.
Formulate purchasing strategy for new vehicles	108589L6	6	6	592
Formulate marketing strategy	108595L6	6	6	594
Formulate brand strategy for vehicles	108596L6	6	6	595
Parts Management				
Deliver and transport parts and accessories	108601L2	2	3	102
Identify/confirm vehicle parts and accessories	108602L2	2	3	104
Implement vehicle parts stocktaking activities	108603L2	2	3	105
Store and retrieve the parts and accessories	108627L2	2	3	106
Implement inventory control of vehicle parts	108605L3	3	3	225
Return procedure of purchase	108606L3	3	3	226
Order parts and accessories	108607L3	3	3	228
Store auto parts and accessories	108611L3	3	3	230
Condemn the inventorial stock	108612L3	3	3	232
Carry out purchasing procedures for auto parts and accessories (for designated motor agents)	108620L3	3	3	234
Carry out the purchasing procedure for auto parts and accessories (for non-designated vehicle agents)	108621L3	3	3	236
Manage warehouse facilities	108628L3	3	3	238
Fulfil the requirements on environmental protection (parts management)	108629L3	3	3	240
Establish and manage the documentary system for the sale of auto parts and accessories	108608L4	4	3	402
Establish the procedures for the receipt, dispatch and delivery of parts and accessories	108613L4	4	3	404
Monitor the delivery process of parts and accessories	108614L4	4	3	406
Manage the documentary system for auto parts and accessories inventory	108615L4	4	3	408
Select suppliers of parts and accessories	108622L4	4	3	410
Purchase renovated parts and accessories	108623L4	4	3	412
Establish methods to assess the applicability of non-OEM parts and accessories	108624L4	4	3	414
Conduct green procurement	108625L4	4	3	416
Establish the procedure for the storage and retrieval of parts and accessories	108630L4	4	3	418
Supply-chain Management in Automotive Industry	111774L4	4	6	510
e-Commerce in Automotive Services	111775L4	4	6	513

Unit of Competency	Code	Level	Credit	Page No.
Establish a procedure for the return of parts and accessories	108609L5	5	6	536
Establish the monitoring system for the delivery of parts and accessories	108616L5	5	3	538
Establish the procedure for stock condemnation	108617L5	5	6	539
Formulate inventory level policy	108618L5	5	6	541
Establish guidelines to protect the stock	108619L5	5	6	543
Formulate purchasing strategy of parts and accessories	108626L5	5	6	545
Design the storage zone for parts and accessories	108631L5	5	6	547
Formulate sales strategy for parts and accessories	108610L6	6	3	597
Formulate management strategy for auto parts and accessories warehouse	108632L6	6	6	598
Vehicle Servicing				
Replace metallic panels and accessories of vehicle body	108637L1	1	3	80
Wax vehicle body	108640L1	1	1	81
Use general materials and tools for vehicle body assembling	108757L1	1	3	82
Check and repair vehicle electronic control systems and devices	108655L2	2	3	108
Dismantle and install the windows and doors as well as their components	108657L2	2	3	110
Check and repair vehicle seats and interior fittings	108659L2	2	3	112
Check and mend the glass fibre panels of vehicle body	108660L2	2	3	113
Measure vehicle body and chassis	108662L2	2	3	115
Use and maintain general painting equipment	108663L2	2	3	116
Use specialised instruments and equipment for vehicle inspection	108670L2	2	6	117
Vehicle body parts fastening operation	108672L2	2	6	119
Routine Motorcycle Maintenance	108674L2	2	3	120
Motorcycle Pre-delivery Preparation and Inspection	108675L2	2	3	122
Remove and replace motorcycle electrical units and components	108677L2	2	3	124
Remove and replace motorcycle chassis units and components	108678L2	2	3	126
Remove and replace motorcycle driveline units and components	108679L2	2	3	128
Inspect, repair and replace motorcycle tyres	108681L2	2	3	130
Carry out Routine Commercial Vehicle Maintenance	108683L2	2	3	132
Apply basic vehicle body building techniques	108758L2	2	3	134
Assemble lighting and indicating systems	108763L2	2	3	135

Unit of Competency	Code	Level	Credit	Page No.
Identify the structure and operating principle of vehicle systems and components	111663L2	2	6	143
Dismantle, replace and re-assemble vehicle system components	111664L2	2	6	145
Dismantle, inspect and replace the low-voltage vehicle electrical systems and accessories	111665L2	2	6	147
Identify the structure and operating principle of motorcycle systems and components	111666L2	2	3	149
Check and repair the low-voltage battery, charging and starting systems of combustion engine vehicles	111667L2	2	2	151
Use general welding equipment	111668L2	2	3	153
Check and repair front and rear windscreens	111669L2	2	3	155
Check and mend the metallic panels of vehicle body	111670L2	2	3	156
Remove paint and process surface treatment on metallic panel	111671L2	2	3	158
Carry out body filling and sanding	111672L2	2	3	159
Carry out vehicle body masking and painting (include plastic components) process	111673L2	2	3	161
Master the application of tools and equipment for vehicle servicing	111674L2	2	3	163
Check and repair the low-voltage electrical systems onboard	111675L2	2	8	165
Car detailing and waxing work	111676L2	2	3	167
The safety setup for the service of the pressurized gaseous fuel systems on vehicles	111677L2	2	3	169
Build the body frame	111678L2	2	3	171
Assemble the floor, windows, passageways, stairs and doors of vehicle	111679L2	2	3	173
Assemble seats and interior fittings	111680L2	2	3	175
Produce vehicle body building fixtures	111681L2	2	3	177
Assemble vehicle body panels	111682L2	2	3	179
Dismantle, inspect and repair the components of liquefied petroleum gas systems onboard	111683L2	2	3	181
Check, repair and replace tyres	111684L2	2	3	183
Carry out Routine Vehicle Maintenance	111685L2	2	3	185
Pre-delivery Preparation and Inspection of vehicle	111686L2	2	3	187
Remove and replace vehicle engine units and components	111687L2	2	3	189
Conduct safety setup for the service of the high-voltage electrical system of electrified vehicles	111688L2	2	3	191
Remove and replace motorcycle powertrain and associated components	111689L2	2	3	193

Unit of Competency	Code	Level	Credit	Page No.
Identify the fundamentals of electrified vehicles	111690L2	2	4	195
Check and repair vehicle transmission and under-chassis systems	111691L2	2	6	197
Appreciate the safety precautions in the maintenance work for electric vehicle	111692L2	2	1	199
Identify the structure and operating principles of the high-voltage systems of electric vehicle and the associated safety awareness	111693L2	2	3	201
Identify the structure and operating principles of the high-voltage systems of electric motorcycles and the associated safety awareness	111694L2	2	2	203
Vehicle safety inspection for regulatory compliance	111695L2	2	6	205
Assemble heat, ventilation and air-conditioning (HVAC) systems on vehicles	111696L2	2	3	207
Recognise the evolution of automotive technology and design	111697L2	2	3	209
Monitor and maintain instruments and equipment	108695L3	3	3	242
Test drive and report the condition of vehicles	108701L3	3	3	243
Conduct fault diagnosis and analysis on vehicle electronic data control systems	108707L3	3	3	245
Conduct maintenance for special equipment and instruments for vehicle inspection	108715L3	3	3	247
Diagnosis and rectify motorcycle engine and components faults	108718L3	3	3	249
Diagnose and rectify motorcycle chassis systems faults	108719L3	3	3	251
Diagnose and rectify motorcycle transmission and driveline system faults	108720L3	3	3	253
Diagnose and rectify motorcycle electrical system faults	108721L3	3	3	255
Liaise with vehicle and product manufacturers on technical matters	108727L3	3	3	257
Conduct diagnostic consultations with customers	108728L3	3	3	259
Offer servicing advice and consulting services	108747L3	3	3	261
Handle after-sales warranty claim	108748L3	3	3	263
Promote repair/maintenance services and consulting services	108750L3	3	3	265
Provide services on value assessment and trade-in of vehicles	108753L3	3	3	267
Conduct maintenance and inspection of low-voltage electrical systems on electrified vehicles	111698L3	3	3	292
Check and repair mechanical breakdown and damage on electrified vehicles	111699L3	3	5	294
Isolation and reinstatement of the high-voltage electrical system of electrified vehicles	111700L3	3	4	296
Dismantle, repair and assemble the traction motors of electrified vehicles	111701L3	3	4	298

Unit of Competency	Code	Level	Credit	Page No.
Check and repair the air-conditioning, cooling and power steering systems of electrified vehicles	111702L3	3	8	300
Removal and replacement of the traction motor and associated components of electrified vehicles	111703L3	3	4	302
Conduct fault diagnosis and repair on the low-voltage battery, charging and starting systems of combustion engine vehicles	111704L3	3	3	304
Maintain and repair the non-live electrified vehicle systems	111705L3	3	3	306
Removal, checking and replacement of the rechargeable energy storage system, charging and propulsion system of an electric motorcycle	111706L3	3	4	308
Examine the roadworthiness of vehicle with specific equipment	111707L3	3	3	310
Carry out routine maintenance for the hydrogen fuel cell system on electrified vehicle	111708L3	3	3	312
Conduct fault diagnosis on the propulsion and power control systems of electric motorcycle	111709L3	3	5	314
Conduct fault diagnosis on various liquefied petroleum gas supply and control systems of vehicles	111710L3	3	3	316
Measure vehicle body/chassis with specialised electronic instruments	111711L3	3	3	318
Rectify large-scale structural damages	111712L3	3	3	319
Check and repair aluminium alloy vehicle body	111713L3	3	3	321
Master the techniques of blending	111714L3	3	3	323
Remedy paint defects (spot painting)	111715L3	3	3	325
Defining defects of paint coating	111716L3	3	3	326
Dismantle and repair the Wireless Fidelity (Wi-Fi), General Packet Radio Service (GPRS) and various sensors for electrified vehicles	111717L3	3	6	328
Maintain various vehicle servicing tools and equipment	111718L3	3	3	330
Conduct fault diagnosis and rectification of the heating, ventilation and air conditioning (HVAC) system of various vehicle types	111719L3	3	4	332
Execute the work on the repair quotation for insurance claims	111720L3	3	3	334
Mix paints	111721L3	3	3	336
Diagnose and rectify vehicle drivetrain faults	111722L3	3	3	338
Provide technical support and advice to colleagues for vehicle repair techniques	111723L3	3	3	340
Conduct maintenance for special equipment and instruments for vehicle inspection	111724L3	3	3	342
Diagnose various faulty liquid fuel supply systems of combustion engine vehicles	111725L3	3	3	344
Conduct fuel purging procedures for component dismantling on liquefied petroleum gas system	111726L3	3	3	346

Unit of Competency	Code	Level	Credit	Page No.
Check and repair various types of fuel supply systems	111727L3	3	3	348
Overhaul internal combustion engines	111728L3	3	3	350
Overhaul the drivetrain mechanism	111729L3	3	6	352
Check and repair vehicle air-conditioning system components	111730L3	3	3	354
Inspect and overhaul motorcycle mechanical units	111731L3	3	6	356
Master the vehicle body welding	111732L3	3	3	358
Conduct fault diagnosis on the low-voltage electrical systems onboard	111733L3	3	6	360
Diagnose and rectify the faulty vehicle engine and components	111734L3	3	6	362
Diagnose and rectify the faulty vehicle under-chassis systems	111735L3	3	6	364
Arrange vehicle examination	111736L3	3	3	366
Execute the maintenance procedures for electric vehicle systems	111737L3	3	5	368
Execute the diagnostic and remedial procedures for the high-voltage systems of electric vehicles and the associated safety measures	111738L3	3	7	371
Familiar with electric vehicle technology and the associated risk handling	111739L3	3	1	373
Execute the maintenance and diagnostic procedures for electric motorcycle systems	111740L3	3	5	375
Evaluate the performance of high-voltage operating systems and execute the maintenance procedures for the rechargeable energy storage system of electric motorcycles	111741L3	3	3	378
Rebuild the cabin upholstery in classic car	111742L3	3	3	381
Restore the power unit performance of a classic car	111743L3	3	3	382
Formulate rules of safety operation for vehicle servicing work	108730L4	4	3	420
Monitor, arrange and coordinate the progress and workflow of the operation in the workshop	108732L4	4	3	422
Master the complicated techniques of steering systems	108736L4	4	6	424
Master the complicated techniques of vehicle body and frame	108739L4	4	6	426
Conduct quality check on vehicle examination	108740L4	4	3	428
Handle complicated technical servicing problems	108751L4	4	3	430
Provide quotation for vehicle body building work	108766L4	4	3	431
Conduct fault diagnosis on the propulsion control systems of electrified vehicles	111744L4	4	6	461
Check and repair vehicle intelligent control systems and devices	111745L4	4	6	463
Risk assessment, emergency rescue and remedy actions for handling broken-down or damaged electrified vehicles	111746L4	4	5	465

Unit of Competency	Code	Level	Credit	Page No.
Conduct the performance check of Rechargeable Energy Storage System (REESS) on electrified vehicles	111747L4	4	5	467
Remove and replace the vehicle high-voltage batteries onboard	111748L4	4	3	469
Conduct risk assessment on vehicle servicing work	111749L4	4	3	471
Master complicated techniques of the power systems on combustion engine vehicles	111750L4	4	9	473
Execute performance tests on vehicles	111751L4	4	6	475
Verify the cases of vehicle insurance claims	111752L4	4	3	477
Coordinate insurance claims of vehicle damage	111753L4	4	3	479
Master the complicated techniques of chassis stability control	111754L4	4	6	481
Master the complicated techniques of suspension systems	111755L4	4	6	483
Master the complicated techniques of transmission systems	111756L4	4	9	485
Master the complicated techniques of electrical and electronic systems	111757L4	4	9	487
Master the complicated techniques of power systems on hybrid electric vehicles	111758L4	4	3	491
Master the complicated techniques of power systems on battery electric vehicles	111759L4	4	5	493
Master the complicated techniques of power systems on hydrogen fuel cell electric vehicles	111760L4	4	6	495
Conduct revalidation process for the legality and serviceability of vehicular liquefied petroleum gas tank	111761L4	4	6	497
Master the complicated techniques of exhaust emission tests	111762L4	4	6	499
Master the complicated techniques of the fuel supply system on liquefied petroleum gas vehicles	111763L4	4	3	501
Estimate the repair cost for accidental damage of vehicles	111764L4	4	3	503
Diagnose and rectify vehicle exhaust emission control systems	111765L4	4	6	505
Analyse the electric vehicle system faults and execute the rectifying procedures	111766L4	4	3	507
Contact vehicle manufacturers and overseas organisations for business and technical exchange	108752L5	5	3	549
Design the loading compartments of trucks	108767L5	5	6	551
Design the carriages of passenger vehicles	108768L5	5	6	553
Diagnose, test and repair vehicle high-voltage batteries	111767L5	5	4	574
Optimise the performance of the power systems on electrified vehicles	111768L5	5	6	576
Optimise the performance of vehicle systems	111769L5	5	6	578

Unit of Competency	Code	Level	Credit	Page No.
Set up and maintain vehicle service workshops for various vehicle types	111770L5	5	6	580
Analyze the emission test results of spark ignition internal combustion engines	111771L5	5	6	582
Establish the testing procedure for vehicle performance	111772L6	6	6	612
Analyse the vehicle test result and evaluate the performance	111773L6	6	6	614
Vehicle Inspection and Prosecution				
Handle the documents for vehicle inspection	111646L3	3	2	278
Apply the local regulations on environmental protection, road and vehicle safety in vehicle examination; and apply occupational safety and health for the associated risk handling	111647L3	3	4	279
Apply the specialised vehicle inspection facilities and equipment and conduct associated basic maintenance	111648L3	3	3	281
Carry out roadworthiness inspection for vehicles	111654L3	3	6	283
Conduct statutory roadworthiness inspections for various types of vehicles and verify the compliance of associated documents	111649L4	4	6	452
Investigate the causes of the vehicle accident	111650L4	4	3	454
Handle vehicle examination-related appeals and complaints	111651L4	4	3	456
Execute the vehicle examination operations and quality management	111652L4	4	4	458
Judge the legitimacy of vehicle operation under rules and regulations relating to road safety and environmental protection	111653L4	4	3	460
Corporate Management				
Be familiar with relevant labour regulations	108567L1	1	1	78
Apply double-entry bookkeeping	108555L2	2	3	89
Handle various kinds of payment methods	108556L2	2	3	90
Apply financial accounting techniques	108557L3	3	6	212
Adopt cost accounting techniques	108558L3	3	6	213
Develop procedures for various forms of payment	108559L4	4	6	388
Implement financial management	108560L4	4	6	389
Appraise staff performance and professional knowledge	108568L4	4	6	391
Draw up staff training programme	108569L4	4	6	392
Arrange filling of job vacancies	108570L4	4	6	394
Compile financial reports applicable to the automotive industry	108561L5	5	6	520
Formulate financial management plans	108562L5	5	6	521
Assess the risks of accident at work within the workplace	108563L5	5	6	523

Unit of Competency	Code	Level	Credit	Page No.
Formulate a comprehensive scheme for organisational operation management	108564L5	5	6	525
Assess human resources market and establish remuneration system	108571L5	5	6	527
Execute the Environmental, Social and Governance (ESG) for Automotive Companies	111781L5	5	3	584
Formulate risk management plans	108565L6	6	6	586
Formulate corporate development strategy	108566L7	7	6	616
Common Competency				
Draw up procedure of housekeeping in motor vehicle environments	108783L1	1	1	83
Carry out maintenance procedure in service workshops	108784L1	1	1	84
Apply the laws and regulations and management system of environmental protection	108801L1	1	1	85
Identify typical dangerous chemicals, understand their characteristics and storage	111655L1	1	3	87
Carry out maintenance work for the equipment inside the operating places	108786L2	2	3	137
Maintain Working Relationships in the Motor Vehicle Environment	108813L2	2	1	138
Carry out the operation guidelines on occupational safety and health	111656L2	2	3	139
Transport vehicles	111657L2	2	1	141
Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)	108769L3	3	3	268
Control vehicle servicing workflow	108787L3	3	3	269
Handle general accidents at work	108788L3	3	3	270
Manage customer relationship	108794L3	3	3	271
Fulfil the requirements on environmental protection (electrical and mechanical servicing)	108804L3	3	3	273
Fulfil the requirements on environmental protection (vehicle body servicing)	108805L3	3	3	275
Conduct demonstration of technical skills	108814L3	3	1	277
Risk of Handling and Storage of High Electric Voltage and Pressurised Gas Vehicles	111658L3	3	4	285
Handle typical dangerous chemicals, pollutants and waste	111659L3	3	3	288
Attend to Customers	111660L3	3	3	290
Promote the culture of quality management in elementary level staffs	108770L4	4	3	432
Coordinate and implement quality management systems	108771L4	4	3	433
Monitor the quality of servicing work	108772L4	4	3	435

Unit of Competency	Code	Level	Credit	Page No.
Conduct preliminary analysis on procedural deficiencies	108773L4	4	3	436
Establish procedures for parking, flow control and security of vehicles	108789L4	4	6	438
Investigate typical accidents at work	108790L4	4	3	440
Manage customer services	108795L4	4	3	441
Handle customers' complaints	108796L4	4	3	443
Monitor occupational safety and health systems	108806L4	4	3	445
Monitor and manage environmental protection operations	108807L4	4	3	447
Formulate management procedure for dangerous chemicals, pollutants and waste	108808L4	4	6	449
Compile report on quality issues	108774L5	5	6	555
Conduct quality audit	108775L5	5	6	556
Design quality management courses	108776L5	5	6	558
Implement the ISO quality management standard	108777L5	5	6	559
Implement the quality management standard specified by the vehicle manufacturer	108778L5	5	6	560
Implement quality management training courses	108779L5	5	6	561
Formulate plans to enhance staff awareness on quality management	108780L5	5	6	563
Establish equipment management system	108791L5	5	6	564
Formulate customer services plan	108797L5	5	6	566
Establish environmental protection management system	108810L5	5	6	568
Establish management system for servicing workshops	111661L5	5	6	570
Establish occupational safety and health management system	111662L5	5	6	572
Formulate quality management policy	108781L6	6	9	600
Implement total quality management strategy	108782L6	6	9	602
Formulate customer service management strategy	108798L6	6	9	604
Formulate customer relation management strategy	108799L6	6	9	606
Formulate comprehensive occupational safety and health policy for the enterprise	108811L6	6	9	608
Formulate comprehensive environmental protection policy for the enterprise	108812L6	6	9	610

Unit of competency is applicable across different functional areas

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Be familiar with relevant labour regulations
Code	108567L1
Range	This unit of competency is applicable to all levels of employees in the automotive industry. Practitioners should be familiar with relevant regulations and understand the responsibility, wages, benefits and rights entitled to employees; and be able to meet the terms stipulated in the regulations when performing their duties.
Level	1
Credit	1 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (The local employment ordinances)
	• Understand the functions of the Labour Department and the significance of the labour regulations to employees and employers.
	• Understand the significance of the Apprenticeship Ordinance to employers and employees in automotive industry, such as:
	  ○ Attendance order
	  ○ Apprentice contract
	  ○ Training institutions
	  ○ Registered apprentices
	• Understand the common terms in the employment contracts, such as:
	  ○ The effectiveness and termination of employment contract
	  ○ The definition of continuous contract of employment
	  ○ The definition of wages
	  ○ Paid leave, sick leave, compensation leave due to injury at work and maternity leave
	  ○ Severance payment and long service payment
	• Understand the spirit of Mandatory Provident Fund and the rights and obligations of each relevant party.
	• Understand the basic spirit of the Employment Ordinance, such as the control of employment agency and the prohibition on children and youth employment; and also understand the prohibition of employment of illegal immigrants stipulated in the Immigration Ordinance.
	• Understand that in a modern and equal society, there are regulations protecting sexual discrimination, racial discrimination, age discrimination, disability discrimination and family status discrimination.
	• Understand the rights and benefits entitled to employees under the following ordinances
	  ○ Employees' Compensation Assistance Ordinance
	  ○ Employees' Compensation Insurance Levies Ordinance
	  ○ Protection of Wages on Insolvency Ordinance
	  ○ Employees' Compensation Ordinance
	  ○ Occupational Deafness (Compensation) Ordinance.
	• Understand the salient points when employed outside Hong Kong.

	2. Performance (Application of local employment ordinances) • Be familiar with the legal binding between an employer and employee relationship, as well as the responsibility, wages, benefits and rights involved. • Protect the right of oneself by compliance with the labour regulations when working in the automotive industry.
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of understanding the responsibilities, wages, benefits and rights entitled to employees under the labour ordinance applicable to the automotive industry and complying with those regulations.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Replace metallic panels and accessories of vehicle body
Code	108637L1
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to safely replace metallic panels and accessories of various kinds of vehicle bodies in accordance with working instructions or the instructions stated in the vehicle manufacturer's servicing manual and providing written report.
Level	1
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The structure of metallic panels and accessories of vehicle body) • Understand the material and structure of the metallic panels of vehicle body. • Understand the material and structure of the accessories of vehicle body. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Replace metallic panels and accessories of vehicle body) • In accordance with working instruction or the guidelines set out in the vehicle manufacturer's installation and servicing manuals, as well as the supplier's specifications, safely replace the metallic panels of vehicle body (such as: bonnet, lid, fender, door panel and bumper, not include rear fender) process includer: ◦ Visual inspection ◦ Functional test ◦ Troubleshoot • Conduct performance and safety inspection after the work and provide written report.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of replacing the metallic panels and accessories of vehicle body in accordance with working instructions or the instructions stated in the vehicle manufacturer's servicing manual. • Capable of conducting visual inspection, dimensional check upon completion of work and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge in vehicle body servicing.

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Unit of Competency

Functional Area - Vehicle Servicing

Title	Wax vehicle body
Code	108640L1
Range	This unit of competency is applicable in vehicle painting workshops. Practitioners should be able to perform the job duty of vehicle body waxing.
Level	1
Credit	1 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Waxing materials and waxing equipment) • Understand the user information relating to general car wax and cleanser. • Understand the functions and operating guides of general waxing equipment. • Understand the content of general cleanser and that of Safety Data Sheet (SDS). 2. Performance (Carry out the procedure of vehicle body waxing) • In accordance with working instruction or the guidelines set out in the vehicle manufacturer's manuals, as well as the supplier's specifications, safely waxing vehicle body. • Use suitable tools and equipment. • Complete the following working procedure according to instructions, including: ◦ Clean and wipe the vehicle body ◦ Remove the markings for the waxing area ◦ Use suitable cleanser and car wax ◦ Use manual and power waxing machine to carry out waxing procedure. • Process final checking.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of carrying out the waxing procedure effectively in accordance with instructions; and • Capable of ensuring that no flaws are left on the surface upon completion of the waxing procedure.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge in handling related chemicals. The major relevant legislation/rule involved in this unit of competency is as follows: • Waste Disposal (Chemical Waste) (General) Regulation • Dangerous Goods Ordinance

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Unit of Competency

Functional Area - Vehicle Servicing

Title	Use general materials and tools for vehicle body assembling
Code	108757L1
Range	This unit of competency is applicable in vehicle body assembling workshops. Practitioners should be able to use general materials and tools correctly in a familiar working environment.
Level	1
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Performance and characteristics of materials and the functions of tools)
	• Understand the performance and characteristics of vehicle body materials, such as metal and non-metal material.
	• Understand how to select adhesive agents, filling materials, securing and locking devices.
	• Understand the purposes and functions of general tools, such as:
	  ◦ Hand tools
	  ◦ Pneumatic tools
	  ◦ Electric tools
	  ◦ Measuring tools
	  ◦ Other related tools
	2. Performance (Select and use general materials and tools)
	• Select and use general vehicle body materials correctly in a familiar working environment according to instructions,.
	• Select and use general vehicle tools correctly in a familiar working environment according to their purposes.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the use of general materials and tools for vehicle body assembling; and • Capable of selecting and using general vehicle materials and tools correctly in a familiar working environment.
Remark	The major relevant legislation/rule involved in this unit of competency is as follows: • Factories and Industrial Undertakings (Lifting Appliances and Lifting gear) Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Draw up procedure of housekeeping in motor vehicle environments
Code	108783L1
Range	This unit of competency is about the routine maintenance of the workplace, carrying out basic, non-specialist checks of relevant workplace equipment, cleaning the work area and using resources as directed.
Level	1
Credit	1 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Personal Protective Equipment) • Know to select and use suitable personal protective equipment throughout all housekeeping and equipment maintenance activities. 2. Performance (draw up housekeeping in motor vehicle environments) • Select and use cleaning equipment which is of the right type and suitable for the task. • Use resources as directed and for their intended purpose only following workplace procedures. • Follow workplace policies, schedules and manufacturers' instructions when cleaning and maintaining equipment. • Ensure your equipment maintenance activities keep your equipment fit for purpose. • Clean the work area(s), for which you are responsible, at the specified time and frequency. • Store your equipment in a safe manner which permits ease of access and identification for use. • Carry out housekeeping activities safely which minimises inconvenience to customers and staff. • Ensure your housekeeping activities keep your work area clean and free from debris and waste materials. • Dispose of used cleaning agents, materials and debris to comply with relevant legal, environmental and workplace requirements. • Report any faulty or damaged equipment to the relevant person(s) clearly and promptly. • Report any anticipated delays in completion to the relevant person(s) promptly.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of effectively using suitable personal protective equipment; and • Capable of using resources to carry out housekeeping activities effectively and safely.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Carry out maintenance procedure in service workshops
Code	108784L1
Range	This unit of competency is applicable to all vehicle service workshops such as body repairing workshops, general mechanical service workshops, vehicle servicing pits, LPG vehicle service workshops, vehicle painting workshops. Practitioners should be able to carry out maintenance duty in servicing workshops according to instructions and under supervision.
Level	1
Credit	1 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operation of facilities in vehicle service workshops) • Understand the building services provisions of different areas in vehicle service workshops such as illumination, ventilation, drainage, air-conditioning and etc. It should include waste handling and related procedures as well. • Understand good environmental protection practice so as to meet or surpass the requirements of the regulations. 2. Performance (Carry out the established maintenance procedure in vehicle service workshops) • Safely carry out the maintenance procedures in vehicle service workshops in accordance with the given instruction and environmental protection requirements,. • Use pollution prevention equipment in relevant maintenance work. • Comprehend the fundamental operation of building services provisions in vehicle service workshops, and report to the supervisor immediately when anomaly is found.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of safely carrying out the maintenance work in vehicle service workshop in accordance to established procedures; and • Capable of reporting to the supervisor when problems are detected.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Apply the laws and regulations and management system of environmental protection
Code	108801L1
Range	This unit of competency is applicable to all levels of employees within the workplaces of the automotive industry. Practitioners should possess general environmental protection concept and able to apply the environmental protection management system set by the organization in the course of the daily work in familiar working environment.
Level	1
Credit	1 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Environmental protection concept)
	• Understand the infrastructure and operating system of environmental protection, such as: the collection and treatment of sewage, solid waste and chemical waste.
	• Be familiar with the basic concept of environmental regulations, such as:
	  ○ Noise Control
	  ○ Waste Disposal
	  ○ Water Pollution Control
	  ○ Ozone Layer Protection
	  ○ Dumping at Sea
	  ○ Air Pollution Control
	  ○ Environmental Impact Assessment
	• Understand the importance of environmental protection, good environmental management rules and comprehensive environmental protection management system set by the organization.
	• know that different vehicles may have different requirements on noise and exhaust emissions.
	2. Performance (Implement environmental protection practice)
	• Possess environmental protection concept in the daily working procedure, such as: save energy, save water, reduce paper consumption, reduce wastes, etc., to meet the organization's comprehensive environmental protection management policy.
	• Comply with regulations of environment protection by understanding the scope of his or her daily work under the environmental protection regulations in a familiar working environment; and seek advice from the supervisor in case of uncertainty.
	• Familiar with the relationship of environmental protection and the automotive industry, and to implement environmental protection operation in the capacity to which one belongs.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of complying with environmental protection regulations by understanding the requirements of those relevant regulations involved in the automotive industry, the organization and the department; and

	• Capable of implementing the environmental protection practice set by the organization for the department to which one belongs and in the designated capacity and bringing it to realisation in the daily work.
Remark	The major relevant legislation/rule involved in this unit of competency is as follows: • Waste Disposal (Chemical Waste) (General) Regulation

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Identify typical dangerous chemicals, understand their characteristics and storage
Code	111655L1
Range	This unit of competency is applicable to general workshops, testing sites, car cleaning shops, car parks, parks, parts warehouses etc. Practitioners should be capable of identifying typical dangerous chemicals and understanding their characteristics to enhance their awareness in a familiar working environment and storage.
Level	1
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The categorisation of dangerous chemicals and their characteristics) • Understand the labelling system of dangerous chemicals and their different degrees of danger; also understand the hazard and characteristics of dangerous chemicals mentioned in the Material Safety Data Sheet (MSDS) • Understand the characteristics of typical dangerous chemicals in gas, liquid and solid phases in the industry • Allowable temporary storage quantity goods (paint, fuel, solvent, etc.) • Understand the regulations of environmental protection, dangerous goods and the organisational requirement on environmental protection 2. Performance (Identify various kinds of typical dangerous chemicals and storage) • Capable to notice the existence of typical inflammable substances or combustible gases by visual, smell or direct contact in the absence of relevant labels • Capable to identify the typical chemicals used in automotive industry such as fuel, paint, thinner, various kinds of lubricants, coolant, hydraulic oil, cleanser, sulphuric acid, etc. from the inventory record; also, capable to identify the categories and labels of chemicals stipulated in the Dangerous Goods (General) Regulations • Identify the possible risk of dangerous goods in vehicle workshop • Identify various kinds of pressure vessels and the related accessories in different worksites and understand their dangerous nature • Execute the established working guidelines on the storage and transportation of dangerous goods • Use the dangerous goods store properly to store and place the dangerous goods in accordance with the Factories and Industrial Undertakings (Dangerous Substances) Regulations, including: ◦ Classification of dangerous goods ◦ Quantity restriction
Assessment Criteria	The integrated outcome requirements of this unit of competency are:
Remark	The relevant ordinances/rules involved in this unit of competency are follows: • Waste Disposal (Chemical Waste) (General) Regulation • Industrial Undertakings (Dangerous Substance) Regulations

	• Dangerous Goods Ordinance. (This UoC replaced 108800L1, 108638L1 and 108639L1)

Specification of Competency Standards
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Unit of Competency

Functional Area - Corporate Management

Title	Apply double-entry bookkeeping
Code	108555L2
Range	This unit of competency is applicable in workplaces relevant to the industry's operational management. Practitioners should be able to master the principles of double-entry bookkeeping and effectively applying this skill to accomplish the duty of accounting in accordance with the requirements.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The principles of double-entry bookkeeping) • Understand the functions and procedure of bookkeeping. • Understand the principles of double-entry bookkeeping and the books of original entry. 2. Performance (Application of double-entry book keeping) • Apply double-entry bookkeeping to record the assets, liabilities, transaction items of expenditure and revenue relevant to the automotive industry. • Compile the books of original entry for the automotive industry according to original vouchers, such as: ◦ Sales journal ◦ Purchase book ◦ Returns inward journal ◦ Returns outward journal ◦ Cash book ◦ Petty cash book
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioners being assessed shall prove that he/she is: • Capable of understanding the principles of double-entry bookkeeping according to the requirements; and • Capable of effectively applying double-entry bookkeeping to accomplish the duty of account entering in accordance with the requirements.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Corporate Management

Title	Handle various kinds of payment methods
Code	108556L2
Range	This unit of competency is applicable in the sales department of vehicle parts and accessories. Practitioners should be able to complete payment process accurately according to various kinds of payment methods established by the organisation to safeguard the interest of both the organisation and the customers.
Level	2
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Payment methods and transaction documents)
	• Understand different payment methods and the handling procedures, such as:
	  ◦ Payment by cash /electronic currency, credits card, cheque and transfer, etc.
	  ◦ Payment by charging to account, deposit and instalments, etc.
	• Identify the validity of financial documents and currency.
	• Know about the financial and transaction documents.
	2. Performance (Handle various kinds of payment process)
	• Handle payment procedure according to various kinds of payment methods established, such as payment by cash/electronic currency, credits card, cheque, charge to account and deposit.
	• Handle Documents Against Payment(D/P) and relevant documents.
	• Handle daily cash balance and relevant bills.
	• Carry out the organisation's established emergency and contingency procedure concerning the validity of currency or relevant documents, insufficient cash and amount discrepancy.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of completing payment process effectively according to various kinds of payment methods established; and • Capable of carry out emergency and contingency procedure according to the established guidelines.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Perform sales of vehicles
Code	108573L2
Range	This unit of competency is applicable to vehicle showrooms and exhibition venues, etc. Practitioners should be able to understand thoroughly the vehicle products and supporting services according to the requirements. They should also be able to apply marketing and selling techniques on general vehicle products to facilitate transactions.
Level	2
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle products) • Have comprehensive understanding of vehicle products, supporting services and practice in the industry, including: ◦ The information and characteristics of various kinds of vehicle product specifications. ◦ Various kinds of supporting services such as after-sales service, warranty claims and vehicle recalls, ◦ Understand the relationship of the Government's environmental protection policy and the organisation's products ◦ Other complementary strategies such as payment methods, used car trade-in and insurance.

	2. Performance (Perform sales techniques)
	• Understand customers' psychology in the choice of vehicle products, including:
	  ◦ Types of customers
	  ◦ The buying psychology of customers with respect to their preference and inclination
	  ◦ Capable of hitting on what one likes and communicate with different types of customers
	• Use product marketing strategies, including:
	  ◦ Compile a list of target customers
	  ◦ Communicate with and feedback to supervisor and marketing department
	  ◦ Devise promotion methods for individual
	  ◦ Determine selling location and time within the prescribed scope
	• Understand clearly the market trend of vehicle products, including:
	  ◦ Understand the trend of vehicle products
	  ◦ Reflect market demand to supervisor to facilitate communication with manufacturers or agents
	  ◦ Collect the latest vehicle products and accessories
	  ◦ Tie in with the vehicle manufacturer's product policy to establish the selling points of one's own products
	  ◦ Analyse the pros and cons of the competitors' products, and devise corresponding strategies with supervisor and marketing department
	• Handle transactions, including:
	  ◦ Provide customers with value-added services (arrangements of payment, order of goods, finance, insurance and installation of vehicle body and equipment.) and further value-added services in the future (contact, alert renewal of insurance and sales promotion.)

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding thoroughly vehicle products and supporting services; and • Capable of using the techniques of selling general vehicle products to promote products to customers.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Perform sales of vehicle parts and accessories
Code	108574L2
Range	This unit of competency is applicable in workplaces relevant to the sales department of vehicle parts and accessories, retail outlets and showrooms. Practitioners should be able to understand thoroughly the products of various kinds of vehicle parts and employ promotion and selling techniques of general retailing products according to the requirements to facilitate transactions.
Level	2
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of vehicle parts and accessories and selling) • Understand the promotion and selling techniques of general retailing products. • Understand the information such as price, market demand and market share of different parts and accessories. • Good understanding of the characteristics of different parts and accessories, such as their range and market positioning. • Understand the characteristics, applicability and operating method of different selling pattern.s • Understand the decision-making process of purchase. • Understand the laws and regulations governing product selling. • Understand the knowledge of general logistics operation, including the knowledge required for handling purchasing orders of parts: ◦ General logistics such as the time required for sea transportation/air freight and customs clearance procedure, etc. ◦ Laws and regulations governing the import of general parts, such as the storage of dangerous goods, etc. 2. Performance (Employ the selling techniques for completing transaction) • Capable of employing marketing and selling techniques in general retailing products. • Familiar with customers' consuming behaviour. • Focus on buyers' behavioural characteristics to give appropriate suggestion to speed up their decision in buying vehicle accessories. • Handle and complete transactions, such as the arrangements of payment and product delivery. • Tie in with the strategies and promotional activities of the sales department.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the characteristics of general vehicle parts; and • Capable of employing promotion and selling techniques of general vehicle parts to promote products to customers.

Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Sales and Marketing

Title	Provide supporting services to vehicle sales
Code	108575L2
Range	Practitioners should be capable of providing supporting services to sales of vehicle products as to facilitate completion of transaction.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Knowledge of operation in vehicle sales) • Good understanding of the general market situation of vehicle sales ◦ Knowledge of the latest information on the market price and demand of different types of vehicles, including new and used vehicles ◦ Understand vehicle-related tax and other charges levied by the Government • Understand vehicle selling system and its procedure. 2. Performance (Provide supporting services to vehicle sales) • Prepare sales document. • Prepare payment voucher. • Contact for delivery of vehicles. • Process the tax for first registration of vehicle. • Process vehicle registration and licencing • Introduce credits funds for vehicles. • Introduce vehicle insurance.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of preparing sales document and payment voucher according to the requirements; and • Capable of providing effective supporting services to vehicle selling as to complete transaction.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Sales and Marketing

Title	Promote to potential/target customers to increase sales opportunities
Code	108576L2
Range	This unit of competency is applicable in vehicle showroom and sales venues. Practitioners should be able to follow instructions of vehicle sellers to perform sales to potential/target customers in order to increase sales opportunities, as well as to collect and convey customer feedbacks.
Level	2
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Knowledge on performing sales to potential / target customer)
	• Understand the knowledge in sales, include:
	  ○ evolution of sales activity
	  ○ criticism of sales practices
	  ○ rules of sales
	  ○ regulation of sales
	• Understand the method to identify potential / target customers
	2. Performance (Perform sales duties)
	• To sell according to instructions of seller.
	• Collect and convey customer feedbacks

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of following seller's instruction in selling; and • Capable of collecting and conveying customer feedbacks.
Remark	The credits value of this unit of competency is set on the presumption that the assessee concerned already has possessed basic vehicle product knowledge.

Specification of Competency Standards
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Unit of Competency

Functional Area - Sales and Marketing

Title	Deliver a product or service presentation
Code	108577L2
Range	This unit of competency is applicable in vehicle showroom and exhibition venues. Practitioners should be able to deliver the message of vehicle product or service accurately; and present the product or service to customers in a positive manner.
Level	2
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Presentation on vehicle products and services to customers)
	2. Performance (Deliver vehicle product or service presentation)
	• Understand the presentation skills in positive manner:
	  ◦ evolution of vehicle product or service
	  ◦ procedures for presentation of vehicle product or service
	  ◦ rules for presentation of vehicle product or service
	• Understand the goals of presentation:
	  ◦ educate on vehicle product or service,
	  ◦ encourage buying and
	  ◦ enlighten of vehicle product or service.
	• Understand the message of the product or service to be delivered.
	• Understand the characteristics of the audience.
	• Deliver presentation on vehicle products or services to customers according to the instruction of seller.
	• Collect and convey customer's feedbacks.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the evolution, procedures and goals of vehicle product or service presentation; • Capable of employing the techniques of presentation; and • Capable of collecting and convey customer's feedbacks.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge on vehicle product and service.

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Unit of Competency

Functional Area - Sales and Marketing

Title	Arrange for delivery and transportation of vehicles
Code	108597L2
Range	This unit of competency is applicable in the sales department of vehicles. Practitioners should be able to arrange for delivery and transportation of vehicles, thus enabling accurate and speedy arrival of vehicles to the destination.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Transportation requirements and logistics procedure for vehicles) • Know the characteristics of vehicles and transportation requirements. • Understand the methods to control transportation of vehicles. • Understand the organisation's vehicle labelling system and its characteristics. • Know the characteristics of different transportation devices. • Know various kinds of communication facilities employed by the organisation • Understand the established acceptance, delivery and transportation procedure for vehicles. • Understand the organisation's filing system with respect to the acceptance, delivery and transportation of vehicles. 2. Performance (Perform deliver and transportation of vehicles) • Deliver and transport vehicles according to the instructions. Such as: ◦ Carry out the verification procedure for acceptance, delivery and transportation of vehicles ◦ Arrange drivers to transport vehicles and confirm the validity period of driving license, T-plate and insurance policy ◦ Safeguard the vehicle transportation process, such as securing the vehicle on the transportation device ◦ Be familiar with vehicle transportation process and transportation route (including contingency route) ◦ Be familiar with the temporary arrangement for allocation of resources ◦ Confirm the document pertaining to the delivery of vehicles ◦ Report damages on vehicles • Arrange the order of transportation according to the department's instructions, such as the characteristics of vehicles and degrees of urgency. • In accordance with the established performance indicators governing the delivery and transportation of vehicles and the effectiveness, review the efficiency of the operation and report any procedural deficiency to the supervisor in note form.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is:

	• Capable of enabling accurate and speedy arrival of the parts and accessories to the destination safely in accordance with the established guidelines on the delivery and transportation process of vehicles; and • Capable of reporting any procedural deficiency to the supervisor with regard to the efficiency of delivery and transportation of vehicles.
Remark	

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Unit of Competency

Functional Area - Sales and Marketing

Title	Handle preparation work for vehicle importation
Code	108598L2
Range	This unit of competency is applicable in industry-related workplaces. Practitioners should be able to maintain contact with vehicle manufacturers according to the organisation's established procedure to obtain documents certifying that the types of vehicle to be imported can meet the requirements of relevant legislations and arrange submission of type-approval application to respective departments.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The legislation relating to vehicle licencing) • Know the Hong Kong's legislative provisions in relation to the requirements and restrictions of vehicle importation. • Know the Hong Kong's legislative provisions on issues relating to vehicle tax. • Know the Hong Kong's statutory requirements and application procedure for vehicle import registration and licencing. • Know the type-approval procedure for imported vehicles. 2. Performance (Handle preparatory work for import of vehicles) • Confirm with related department the type of vehicle for import. • Liaise with the manufacturer to collect the document for type-approval • Arrange submission of type-approval application to respective departments • Arrange submission of imported vehicle type to respective departments for inspection • Submit application on the selling price of the imported vehicle type • Process the first registration of vehicles • Calculate the first registration tax of vehicles according to approved selling price and additional accessories • Contact finance and insurance companies to arrange relevant issues • Arrange for the provision of necessary accessories and additional equipment for respective vehicles by other product /service providers to cater for the needs of customers and relevant departments; and calculate the increased expenses and tax • Capable of coordinating with the service department for arrangement of pre-delivery inspection and associate transportation of the new cars • Capable of coordinating with the sales department to hand over new cars
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioners being assessed shall prove that he/she is: • Capable of contacting vehicle manufacturers in obtaining the required documents on the agreed import vehicle type to comply with the statutory requirement on vehicle importation;

	• Capable of arranging vehicle for examination and apply vehicle license in compliance with respective local legislative provisions; and • Capable of calculating the tax on the retailing price of vehicles and other accessories.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed knowledge on vehicle services/financial management.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Deliver and transport parts and accessories
Code	108601L2
Range	This unit of competency is applicable in the sales department of vehicle parts and accessories, inventory control and management departments as well as procurement control department. Practitioners should be able to deliver and transport the parts and accessories in an effective manner, enabling accurate and speedy arrival of the parts and accessories to the destination.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The transportation requirements of parts and accessories and the logistics procedure) • Know the characteristics of parts and accessories as well as transportation requirements. • Know the organisation's labelling system of parts and accessories and its characteristics. • Know the characteristics of different transportation devices. • Know various kinds of communication facilities employed by the organisation. • Know the established procedure for the acceptance, delivery and transportation of parts and accessories • Know the organisation's filing system with respect to the acceptance, delivery and transportation of parts and accessories. 2. Performance (Deliver and transport parts and accessories) • Deliver and transport the parts and accessories according to established procedure: ◦ Implement with the verification procedure for the delivery and transportation of parts and accessories (including the quantity) ◦ Safeguard the parts and accessories during the transportation process, such as ways to secure them on the transportation device ◦ The transportation method, procedure and transportation route of parts and accessories (including contingency route) ◦ The temporary arrangement for allocation of resources ◦ The documents pertaining to the delivery of parts and accessories ◦ Report damages on the parts and accessories • Arrange the transportation order of parts and accessories according to the total transportation quantity, their characteristics and degrees of urgency. • In accordance with the established performance indicators governing the delivery and transportation of parts and accessories, review the efficiency of the whole process and report any procedural deficiency to the supervisor in note form
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is:

	• Capable of enabling accurate and speedy arrival of the parts and accessories to the destination safely in accordance with the established guidelines on the delivery and transportation procedure of parts and accessories; and • Capable of reporting any procedural deficiency to the supervisor with regard to the efficiency of delivery and transportation of parts and accessories.
Remark	The credits value of this unit of competency is set on the presumption that the assessee has already possessed basic knowledge of occupational safety and health. They also possess the capability to identify general vehicle parts and accessories.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Identify/confirm vehicle parts and accessories
Code	108602L2
Range	This unit of competency is applicable in the sales department of vehicle parts and accessories. Practitioners should be able to identify the products required by customers (including the staff of the organisation's maintenance department) accurately and speedily according to the organisation's established identification method and procedure. They should also provide relevant information to customers.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The use of vehicle parts and accessories and their coding method) • Understand the use, location and names of vehicle parts and accessories. • Understand the coding method of vehicle parts and accessories with information provided by vehicle manufacturers and parts suppliers. 2. Performance (Identify/confirm vehicle parts and accessories) • According to the information provided by customers, accurately and speedily confirm the codes, names, functions, appearances, physical objects, vehicle types and manufacturing year of the parts and accessories required by customers. • With reference to confirmed information, accurately and speedily identify the products required by customers according to the catalogue (soft copy or hard copy) provided by vehicle manufacturers or parts suppliers. • Confirm the inventory level, location and price of the parts and accessories required by customers from inventory record (soft copy or hard copy). • Let customers confirm their required products and provide relevant information such as price.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of confirming the parts and accessories required by customers accurately and speedily according to the information provided by them; and • Capable of identifying the products and relevant information required by customers accurately and speedily according to the catalogue and inventory record provided by vehicle manufacturers or parts suppliers.
Remark	The credits value of this unit of competency is set on the presumption that the practitinoer has already possessed the capability to identify vehicle parts and accessories.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Implement vehicle parts stocktaking activities
Code	108603L2
Range	This unit of competency is applicable in vehicle parts store. Practitioners should be able to conduct stocktaking of vehicle parts according to the manufacturer's instructions, keeping those stock record, maintaining stock level and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Stocktaking in vehicle parts operation) • Understand the stock records to identify parts. • Understand to monitor and check on the progress of a major stocktake. • Understand the frequency for stocktaking. • Understand to report on the results of stocktaking and the type of reports used. 2. Performance (Carry out stocktaking in vehicle parts operation) • Use the correct format to report the stock records. • Chose suitable time according to the stock record for stocktaking. • Provide written report after stocktaking.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is: • Capable of following manufacturer's instruction to take the stocking procedure; and • Capable of providing written report after the stocking procedure.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Store and retrieve the parts and accessories
Code	108627L2
Range	This unit of competency is applicable in the sales department of vehicle parts and accessories, inventory control and management as well as warehouse management departments. Practitioners should be able to effectively carry out the storage and retrieval procedure for non-dangerous goods, enabling the goods to be stored and retrieved accurately, safely and speedily.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The characteristics of vehicle parts and accessories and the related storage and retrieval procedure) • Understand the characteristics of vehicle parts and accessories; and the requirements of storage, transportation and protection. • Understand the operating method of different transportation devices. • Understand the storage and retrieval method of various kinds of goods and the relevant monitoring document. • Understand the labelling system of vehicle parts and accessories employed by the organisation and its characteristics. • Understand the organisation's established storage and retrieval procedure for vehicle parts and accessories. 2. Performance (Store and retrieve vehicle parts and accessories) • According to the organisation's established storage and retrieval procedure for vehicle parts and accessories, perform the following duties: ◦ The procedure for storing, retrieving and verifying various kinds of goods in different places (e.g. warehouses, servicing workshops and retailing places) ◦ The file record of storage and retrieval of goods ◦ The protection and packaging specifications for different kinds of goods ◦ The safety and transportation requirements for different kinds of goods • Carry out the organisation's established contingency procedure to cope with non-routine problems such as loss or damage of goods. • Reflect procedural deficiency to supervisor or respective counterpart in note form.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is: • Capable of storing and retrieving the goods accurately, safely and speedily according to the organisation's established procedure for storage and retrieval of vehicle parts and accessories (including completing the relevant monitoring document);

	• Capable of carrying out contingency procedure according to the organisation's established guidelines, and • Capable of reflecting procedural deficiency to supervisor or respective counterpart in note form with regard to the efficiency of the relevant procedure.
Remark	The credits value of this unit of competency is set on the presumption that the assessee already has possessed basic knowledge of occupational safety and health, and the capability to identify vehicle parts and accessories.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair vehicle electronic control systems and devices
Code	108655L2
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to check, repair and adjust various kinds of vehicle electronic/data control systems and devices safely according to the instructions in the vehicle manufacturer's servicing manual. They should also be able to conduct basic adjustments and tests on components upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operating principles of various types of vehicle electronic control systems and devices) • Understand the structure and basic operating principles of various types of vehicle electronic control systems and devices. • Understand vehicle electronic/data control principles. • With reference to the requirements in the servicing manual provided by the vehicle manufacturer or parts supplier, understand the general checking and repairing procedure for various types of vehicle electronic/data control systems and devices. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Check and repair various types of vehicle electronic control systems and devices) • According to the instructions in the servicing manual provided by vehicle manufacturer or parts supplier and the requirements of occupational safety and health as well as that of environmental protection, safely check, repair and adjust various types of vehicle electronic control systems and devices, including: ◦ Capable of identifying the common faults in various types of vehicle electronic control systems and devices by visual inspection ◦ Use general tools and instruments to check and measure various types of vehicle electronic control systems and devices as well as rectify typical system fault ◦ According to inspection result, repair the parts of various types of vehicle electronic control systems and devices as well as circuit/data systems, including dismantle, replace, re-assemble and adjust relevant system components and accessories ◦ According to instructions, measure and adjust the operation and effectiveness of various types of vehicle electronic/data control systems • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking, repairing and adjusting general vehicle electronic/data control systems and devices safely according to the instructions in the servicing manual provided by vehicle manufacturer or parts supplier; and • Capable of conducting basic adjustments and tests on components upon completion of work and providing written report
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle electronic and electrical system servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Dismantle and install the windows and doors as well as their components
Code	108657L2
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to dismantle and install the windows and doors as well as their components correctly according to the instructions in the vehicle manufacturer's servicing manual. Conduct performance and safety inspection after the work and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of windows and doors as well as their components) • Understand the structure of windows and doors as well as their components. • Understand the operating principles of windows and doors as well as their components. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Dismantle and install the windows and doors as well as their components) • According to working instructions, the instructions in the vehicle manufacturer's installation and servicing manual as well as the supplier's specification, safely dismantle the windows and doors as well as mechanical components under instructions and supervision; and minimize material consumption. • Carry out the working procedure of dismantling and installation of windows and doors in accordance with the respective rules of the workshops and environmental protection requirements; and ensure that no damage is done to the formation parts or systems during the procedure. • Remove and connect relevant wires according to instructions. • Adjust the vehicle doors and locks, etc. e and test the operation of other components after installation. • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure and operating principles of the windows and doors as well as the mechanical components; and • Capable of dismantling and installing the windows and doors as well as their components safely according to working instructions or the instructions in the vehicle manufacturer's servicing manual; and conducting adjustments tests and providing written report.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle body servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair vehicle seats and interior fittings
Code	108659L2
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to check and repair vehicle seats and interior fittings correctly according to the instructions provided by vehicle manufacturer/material supplier, providing written report after the work
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operating of vehicle seats and interior fittings) • Understand the structure of vehicle seats and interior fittings. • Understand basic operating principles of vehicle seats and interior fittings. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Check and repair the seats and interior fittings of vehicles) • According to the instructions in the vehicle manufacturer's installation and servicing manual, the requirements of occupational safety and health as well as that of environmental protection, check and repair vehicle seats and interior fittings. • According to instructions, remove and connect relevant wires correctly. • Check and test vehicle seats and interior fittings according to the manufacturer's specification to ensure they can meet the factory's requirements. • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking and repairing vehicle seats and interior fittings safely according to the instructions in the vehicle manufacturer's servicing manual; and • Capable of conducting basic inspection and tests on components according to the manufacturer's specification upon completion of work and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle body servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and mend the glass fibre panels of vehicle body
Code	108660L2
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to check and mend the glass fibre panels of vehicle body safely according to the instructions in the vehicle manufacturer's servicing manual. They should also be able to conduct basic tests on components upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Safety rules and regulations in mending the fibre-glass panels of vehicle body) • Know about the devices and accessories for mending the glass fibre panels of vehicle body. • Understand the risks and preventive methods in using relevant dangerous materials and during the procedure. • Understand the importance of ventilation in worksites. • Know about the content of Material Safety Data Sheet (MSDS) with respect to chemicals. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Mend and check the glass fibre panels of vehicle body) • Identify various kinds of typical defects on the surface of glass fibre panels (e.g. peeling off, cracks and air holes). • Use appropriate methods and procedure to mend the glass fibre board. • Ensure that work is carried out under suitable environment and appropriate protective measure is adopted. • According to the instructions in the vehicle manufacturer's servicing manual and environmental protection requirements of occupational safety and health, check and mend the glass fibre panels of vehicle body. • Use correct tools to polish. • According to the manufacturer's specification, conduct visual inspection and dimensional check on and surface of the glass fibre panels of vehicle body. • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking and mending the glass fibre panels of vehicle body according to the instructions in the vehicle manufacturer's servicing manual and the environmental protection and occupational

	safety and health requirements; and • Capable of conducting visual inspection and dimensional check on and surface of the glass fibre panels of vehicle body according to the manufacturer's specification. • Capable of conducting performance and safety inspection after the work and providing written report
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle structure and know how to handle dangerous goods.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Measure vehicle body and chassis
Code	108662L2
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to correctly measure the body alignment and comparing that with the manufacturer's specification in the service manual and providing written report after the work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle body measurement) • Know about the methods to diagnose damage and deformation of vehicle body. • Know about various kinds of measuring tools/instruments and the measuring methods for vehicle body. • Understand the vehicle manufacturer's vehicle body measurement map. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Carry out the process of vehicle body measurement and chassis deformation inspection) • Conduct preparatory work prior to the measurement of vehicle body, including the vehicle and tools/equipment. • Carry out the process of vehicle body measurement and record relevant data according to the instructions provided by the tools/equipment manufacturer. • Compare the measurement data with the specification to identify the deformation of vehicle. • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of accurately conducting vehicle body measurement according to the instructions in the vehicle/equipment manufacturer's servicing manual; and • Capable of identifying the deformation condition of the vehicle and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle body servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Use and maintain general painting equipment
Code	108663L2
Range	This unit of competency is applicable in vehicle painting workshops. Practitioners should be able to use and maintain general painting equipment for vehicles according to the instructions provided by equipment manufacturer.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Use and operating principles of the equipment in vehicle painting workshops) • Understand the use of equipment in vehicle painting workshops. • Understand the content of the user manual provided by vehicle painting workshop equipment manufacturer. • Understand the operating principle of the equipment in vehicle painting workshops. • Know the safety rules and personal protective equipment required for the use and maintenance of equipment in vehicle painting workshops. • Understand the ordinances and regulations in relation to the equipment in vehicle painting workshops. 2. Performance (Use and maintain general equipment in vehicle painting workshops) • Use the equipment in vehicle painting workshops according to the equipment manufacturer's user manual. • Clean the respective tools/devices and dispose chemical waste, etc. upon completion of work. • Implement or arrange maintenance plan for the equipment in vehicle painting workshops according to the instructions in the equipment manufacturer's user manual, such as regular inspection of painting booth, replacement of filter element and calibration of electronic scale. • Conduct initial fault diagnosis for the equipment in vehicle painting workshops and issue suspension notice; and carry out or arrange for repair work.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting appropriate equipment in vehicle spraying workshops according to the required use; • Capable of carrying out or arranging maintenance work for the painting equipment according to the user manual provided by vehicle painting equipment manufacturer; and • Capable of conducting initial fault diagnosis for the painting equipment and arranging / carrying out repair work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle painting and know-how to handle chemicals.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Use specialised instruments and equipment for vehicle inspection
Code	108670L2
Range	This unit of competency is applicable in vehicle servicing workshops or vehicle inspection places. Practitioners should be able to use special instruments and equipment for vehicle inspection to check and repair various vehicle systems and components according to the relevant legislative provisions under the Road Traffic Ordinance of Hong Kong, the instructions in vehicle manufacturer's servicing manual or the user guide provided by the manufacturer of special instruments and equipment for vehicle inspection.
Level	2
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Special instruments and equipment for vehicle inspection) • Understand the structure, use and basic operating principles of specialised instruments and equipment for vehicle inspection. • Understand the legislative provisions under the Road Traffic Ordinance of Hong Kong in relation to vehicle inspection. • Understand the instructions in vehicle manufacturer's servicing manual or the user guide provided by the manufacturer of specialised instruments and equipment for vehicle inspection. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Use specialized instruments and equipment for vehicle inspection) • According to the instructions in vehicle manufacturer's servicing manual or the user guide provided by the manufacturer of specialised instruments and equipment for vehicle inspection, the requirements of occupational safety and health as well as that of environmental protection, safely use specialised instruments and equipment for vehicle inspection to check various vehicle systems and components, such as: ◦ Specialised instruments and equipment for various types of engine and mechanical components ◦ Specialised instruments and equipment for various types of fuel supply systems ◦ Specialised instruments and equipment for various types of engine management systems ◦ Specialised instruments and equipment for various types of vehicle braking systems ◦ Specialised instruments and equipment for vehicle steering systems ◦ Specialised instruments and equipment for vehicle suspension systems ◦ Specialised instruments and equipment for vehicle transmission systems ◦ Specialised instruments and equipment for electric systems ◦ Specialised instruments and equipment for other related systems
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is:

	• Capable of using testing instruments /equipment for vehicle inspection correctly to check various vehicle systems and components according to the instructions in vehicle manufacturer's servicing manual or the user guide provided by the manufacturer of special instruments /equipment for vehicle inspection.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the basic knowledge of vehicle mechanic servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Vehicle body parts fastening operation
Code	108672L2
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to fasten vehicle body parts safely according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, safety and health regulations. They should also be able to conduct basic tests on components upon completion of work and providing written report after the work.
Level	2
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Operation, tools or equipment use for body stabling operation)
	• Know the types of body stabling operation, such as:
	  ○ Riveting (single sided, double sided, self-piercing)
	  ○ clinching
	  ○ bolts and fasteners
	  ○ screwing (self-threading, self -piercing)
	  ○ adhesive bonding (rubber base, acrylic base and silicone base)
	  ○ hybrid joining (combinations of techniques listed)
	• Know the tools, equipment used for body stabling.
	• Understanding of the relevant legal requirements on road and vehicle safety and environment protection.
	2. Performance (Carry out vehicle body stabling operation)
	• According to the instructions in the vehicle manufacturer's servicing manual, occupational safety and health as well as that of environmental protection, safely check, carry out vehicle body stabling operation.
	• Conduct safety inspection after the work and provide written report focusing on:
	  ○ Abnormalities
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of carrying out vehicle body part fastening operation, according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, safety and health regulations with the tools and equipment, and conducting safety inspection and reporting work records.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle body structure.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Routine Motorcycle Maintenance
Code	108674L2
Range	This unit of competency is applicable in motor cycle servicing workshops. Practitioners should be able to carry out routine motor cycle maintenance work safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, safety and health regulations. They should also be cable to conduct safety tests on systems upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Procedure to carry out routine motorcycle maintenance work) • According to the instructions in the motor cycle manufacturer's servicing manual, understand the procedure to carry out routine motorcycle maintenance work. Such as: ◦ Quick service ◦ Standard service • Understand the tools and equipment to carry out routine motorcycle maintenance work. • Understand the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Carry out routine motorcycle maintenance work) • According to the instructions in the motorcycle manufacturer's servicing manual, occupational safety and health as well as that of environmental protection, to carry out the routine maintenance work, included: ◦ Engine unit ◦ Fuel supply system ◦ Engine management system ◦ Brake system ◦ Steering system ◦ Suspension system ◦ Transmission system ◦ Electrical system ◦ Body and Frame unit • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of carrying out routine motor cycle maintenance work safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, safety and health regulations; • Capable of conducting safety inspection upon completion of work; and providing written report; • Capable of testing the performance of various types of systems according to the relevant provisions of the Road Traffic Ordinance.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of the functions of the motorcycle systems. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Motorcycle Pre-delivery Preparation and Inspection
Code	108675L2
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to carry out motorcycle pre-delivery preparation and inspection safely according to the instructions in the motorcycle manufacturer's manual and the relevant requirements on environment, occupational safety and health regulations. They should also be cable to conduct safety tests on systems upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Requirements to carry out motorcycle pre-delivery preparation) • According to the instructions in the motorcycle manufacturer's manual, understand the requirements to carry out motor cycle pre-delivery preparation work. • Understand the documents needed for motorcycle pre-delivery. 2. Performance (Carry out motorcycle pre-delivery preparation and inspection work) • According to the instructions in the motorcycle manufacturer's manual, occupational safety and health as well as that of environmental protection, to carry out the motorcycle pre-delivery preparation and inspection work, included: ◦ Engine unit ◦ Fuel supply system ◦ Engine management system ◦ Brake system ◦ Steering system ◦ Suspension system ◦ Transmission system ◦ Electrical system ◦ Body and Frame unit • Inspection of the documents needed for motorcycle pre-delivery. • Provide written report after the work
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of carrying out motorcycle pre-delivery preparation and inspection work safely according to the instructions in the motor cycle manufacturer's manual and the relevant requirements on environment, occupational safety and health regulations; • Capable of knowing the documents needed for motorcycle delivery; and • Capable of testing the performance of various types of systems according to the relevant provisions of the Road Traffic Ordinance.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of the functions of the motorcycle systems. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Remove and replace motorcycle electrical units and components
Code	108677L2
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to remove and replace motorcycle electrical units and components safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct basic tests on components upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operating principles of motorcycle electrical units and components) • Understand the structure and basic operating principles of motorcycle electrical units and components such as: ◦ Lighting systems ◦ Security and alarm systems ◦ Comfort and convenience systems ◦ Electrical rider safety systems ◦ Monitoring and instrumentation systems • With reference to the instructions in the motorcycle manufacturer's servicing manual understand the general remove and replace procedure for the components. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Remove and replace motorcycle electrical units and components) • According to the instructions in the motorcycle manufacturer's servicing manual and the requirements of occupational safety and health as well as that of environmental protection, safely remove and replace motorcycle electrical units and components, including: ◦ Capable of identifying the general problems in motorcycle electrical units and components by visual inspection ◦ Functional test of each electrical units and components ◦ Eliminate typical system failure • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of removing and replacing motorcycle electrical units and components safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of conducting basic tests on components upon completion of work and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of motorcycle electrical and mechanical servicing. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Remove and replace motorcycle chassis units and components
Code	108678L2
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to remove and replace motorcycle chassis units and components safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct basic tests on components upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Structure and basic operating principles of motorcycle chassis units and components)
	• Understand the structure and basic operating principles of motorcycle chassis units and components such as:
	  ○ Steering systems
	  ○ Suspension systems
	  ○ Braking systems
	• With reference to the instructions in the motorcycle manufacturer's servicing manual and the requirements of relevant provisions under the Road Traffic Ordinance, understand the general remove and replace procedure for the components.
	• Understanding of the relevant legal requirements on road and vehicle safety and environment protection.
	2. Performance (Remove and replace motorcycle chassis units and components)
	• According to the instructions in the motorcycle manufacturer's servicing manual and the requirements of occupational safety and health as well as that of environmental protection, safely remove and replace motorcycle chassis units and components, including:
	  ○ Capable of identifying the general problems in motorcycle chassis units and components by visual inspection
	  ○ Functional test of each chassis units and components
	  ○ Remove and replace motorcycle chassis units and components with safety procedure
	  ○ Eliminate typical system failure
	• Conduct performance and safety inspection after the work and provide written report focusing on:
	  ○ Abnormalities
	  ○ Measured data
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of removing and replacing motorcycle chassis units and components safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of conducting basic tests on components upon completion of work and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of motorcycle mechanical servicing. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Remove and replace motorcycle driveline units and components
Code	108679L2
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to remove and replace motorcycle driveline units and components safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct basic tests on components upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operating principles of motorcycle driveline units and components) • Understand the structure and basic operating principles of motorcycle driveline units and components such as: ◦ Chain and sprockets ◦ Wheel bearings and seals ◦ Drive shaft ◦ Gear drive ◦ Belts and pulleys • With reference to the instructions in the motorcycle manufacturer's servicing manual, understand the general removal and replacement procedure for the components. • Understand the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Remove and replace motorcycle driveline units and components) • According to the instructions in the motorcycle manufacturer's servicing manual and the requirements of occupational safety and health as well as that of environmental protection, safely remove and replace motorcycle driveline units and components, including: ◦ Capable of identifying the general problems in motorcycle driveline units and components by visual inspection ◦ Functional test of each driveline units and components ◦ Remove and replace motorcycle driveline units and components with safety procedure ◦ Eliminate typical system faults. • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of removing and replacing motorcycle driveline units and components safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of conducting basic tests on components upon completion of work with written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of motorcycle mechanical servicing. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Inspect, repair and replace motorcycle tyres
Code	108681L2
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to inspect, repair and replace motorcycle tyres safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct safety inspection upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Structure of motorcycle tyres and the tools and equipment for the repair and replace)
	• Understand the structure of motorcycle tyres, such as:
	  ○ Tube tyre
	  ○ Tubeless tyre
	• Know the tools and equipment for the repair and replace of motorcycle tyres, such as:
	  ○ Lifting and supporting equipment
	  ○ Tyre removal and refitting tools and equipment
	  ○ Tread depth measuring equipment
	  ○ Inflation equipment
	  ○ Balancing equipment
	  ○ Tyre repair tools
	• With reference to the instructions in the motorcycle manufacturer's servicing manual, understand the inspection, repair and replace motorcycle tyres procedures and regulations.
	• Understand the relevant legal requirements on road and vehicle safety and environment protection.
	• Understand the relevant legal requirements on road and vehicle safety and environment protection.

	2. Performance (Inspect, repair and replace motorcycle tyres)
	• According to the instructions in the motorcycle manufacturer's servicing manual and the requirements of occupational safety and health as well as that of environmental protection, safely repair and replace motorcycle tyres, including:
	  ○ Capable of identifying the general problems in motorcycle tyres, such as: wheel rim, tyre valve and inner tube by visual inspection
	  ○ Accurate measurement of tread depth
	  ○ Inspection of tyre pressures
	  ○ Use of removal and refitting, balancing equipment and repairing tools to repair and replace of motorcycle tyres in safety procedure
	  ○ Eliminate typical safety faults.
	• Conduct performance and safety inspection after the work and provide written report focusing on:
	  ○ Abnormalities
	  ○ Measured data
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of inspecting, repairing and replacing motorcycle tyres safely according to the instructions in the motorcycle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of conducting safety inspection of tyres upon completion of work and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed knowledge of motorcycle tyre technology. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations • Dangerous Goods Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Carry out Routine Commercial Vehicle Maintenance
Code	108683L2
Range	This unit of competency is applicable in commercial vehicle servicing workshops. Practitioners should be able to carry out routine commercial vehicle maintenance work safely according to the instructions in the commercial vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct performance and safety tests on systems upon completion of work according to the manufacturer's specification and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Procedure to carry out routine commercial vehicle maintenance work) • In accordance with the commercial vehicle manufacturer's service manual, understand the procedures to carry out routine commercial vehicle maintenance work. Such as: ◦ Quick service ◦ Standard service • Understand the tools and equipment to carry out routine commercial vehicle maintenance work. • Understand the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Carry out routine commercial vehicle maintenance work) • In accordance with the commercial vehicle manufacturer's servicing manual, Hong Kong Road Traffic Ordinance, requirements of occupational safety & health, and environmental protection, carry out the routine maintenance work, including: ◦ Engine unit ◦ Fuel supply & emission systems ◦ Engine management system ◦ Brake system ◦ Steering system ◦ Suspension system ◦ Transmission system ◦ Electrical system ◦ Body and Frame unit • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of carrying out routine commercial vehicle maintenance work safely according to the instructions in the commercial vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; • Capable of conducting safety inspection upon completion of work and providing written report; and • Capable of assessing the performance of various systems according to the manufacturer's specification and relevant ledge requirements.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of the functions of the commercial vehicle systems. The major legislation/code involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Apply basic vehicle body building techniques
Code	108758L2
Range	This unit of competency is applicable in vehicle body building workshops. Practitioners should be able to select suitable parts to build vehicle body according to design drawing and providing written report after the work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle body building) • Understand the content of general vehicle body working drawing, including vehicle body layout, symbols, installation guidelines and the specification of installation and commissioning. • Understand the properties and characteristics of general vehicle body materials, such as metal, wood, plastic, glass fibre, glass and filling materials. • Understand the properties of materials with regard to water-proofing, rust proofing, noise reduction, vibration dampening and heat-insulating. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Select the materials and tools required for vehicle body building) • In accordance with working instruction set out in the vehicle manufacturer's installation / servicing manuals, select suitable tools, materials, and procedure to assemble vehicle body according to design drawing. • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting suitable tools and materials correctly to perform vehicle body building duty according to working instructions and design drawing, and providing written report; and • Capable of preparing the required materials correctly for vehicle body building job.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the basic knowledge of tools and materials.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Assemble lighting and indicating systems
Code	108763L2
Range	This unit of competency is applicable in vehicle body building workshops. Practitioners should be able to assemble the lighting, signalling as well as various meter and indicating systems in accordance with working instructions and the content in the lighting and indicating systems assembling manual. They should also be capable of conducting basic tests on components upon completion of work, and providing written report after the work
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operating principles of lighting, signalling as well as various meter and indicating systems in vehicles) • Understand the legal requirements for lighting, signalling and indicating systems in vehicles under respective local legislative provisions. • Understand the structure and basic operating principles of lighting, signalling as well as various meter and indicating systems in vehicles. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Carry out the assembling procedure for lighting, signalling as well as various meter and indicating systems in vehicles) • Safely assemble the lighting, signalling as well as various meter and indicating systems according to the instructions in manufacturer's servicing manual and the requirements of occupational safety and health as well as that of environmental protection, including: ◦ Capable of selecting appropriate personal protective ◦ Capable of assembling the lighting, signalling as well as various meter and indicating systems correctly ◦ Carry out the assembling procedure according to the respective rules of workshops ◦ Connect relevant wires and plugs correctly • Conduct basic tests on components upon completion of work and provide written report.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting suitable tools and materials correctly according to the content in the manufacturer's assembling manual; • Capable of assembling the lighting, signalling as well as various meter and indicating systems according to the content in the manufacturer's assembling manual; and • Capable of inspecting and testing the components upon completion of the assembling procedure and providing written report.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle electronic and electric systems servicing.

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Carry out maintenance work for the equipment inside the operating places
Code	108786L2
Range	This unit of competency is applicable in vehicle operating places (e.g. various kinds of servicing workshops, warehouse of new and old parts and vehicle storage warehouse). Practitioners should be able to understand the operation of respective equipment and carry out simple maintenance work according to instructions.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operating methods of the equipment within the vehicle operating places) • Good understanding of the use, operating methods, required performance standard and potential dangers of the respective equipment within the vehicle operating places. 2. Performance (Carry out maintenance work) • Conduct inspection in accordance with instructions and established inspection method; and compare the result with the required performance standard to determine if the functions of the equipment are normal. • Carry out simple maintenance work according to instructions, such as replace filter units and conduct in-house cleaning. • If the respective equipment should be repaired by the organisation, then trace out where the problem lies and replace or tune relevant components to resume normal functioning of respective equipment under clear instructions; and complete maintenance record.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the detailed operation and performance of respective equipment; • Capable of carrying out simple maintenance work for respective equipment according to instructions; and • Capable of safely carrying out maintenance work for the equipment which is on the list to be repaired by the organisation itself to resume its normal functioning; and complete maintenance record.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Maintain Working Relationships in the Motor Vehicle Environment
Code	108813L2
Range	This unit of competency is about maintaining good working relationships with all colleagues in the working environment by using effective communication and support skills.
Level	2
Credit	1 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Maintaining good working relationships with colleagues) • Understand how to maintain effective communication and cooperate with colleagues 2. Performance (Maintaining good working relationships with colleagues) • Contribute to team work by initiating ideas and co-operating with colleagues. • Respond promptly and willingly to the requests for assistance from colleagues should they be permitted to do so in accordance with the job responsibilities and personal capabilities • Able to refer colleagues to the responsible persons of appropriate job areas correctly for follow-up work • Able to give colleagues sufficient and accurate information and support • Able to make clear and courteous requests for assistance from colleagues • Respect the views and opinions raised by other colleagues
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of maintaining good relationships with all colleagues in the working environment by using effective communication and support skills.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Carry out the operation guidelines on occupational safety and health
Code	111656L2
Range	This unit of competency is applicable in workplaces relevant to vehicle service workshops and storage warehouses. Practitioners should be able to perform routine working processes according to the established operation guidelines on occupational safety and health in familiar workshops or warehouses.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Occupational safety legislation) • Understand the functions of the Occupational Safety and Health Council, the basic requirements of the Occupational Safety and Health Ordinance and the Factories and Industrial Undertakings Ordinance, such as the general responsibilities to be fulfilled by employers and employees; also know about the prevention of accidents, fire prevention measures, electrocution prevention, the hygienic condition of the working environment, first aid, manual handling operation, as well as the use of display devices. • Understand the different statutory fire prevention installations and equipment in the operating places of the automotive industry and be familiar with the emergency and contingency measures to be implemented in one's capacity. • Understand that liquefied petroleum gas and hydrogen-fuelled vehicles, the relevant workshops and technicians are subject to being controlled under the Gas Safety Ordinance and relevant legislation. • Understand that electrified vehicles and the relevant workshops and technicians are subject to being controlled under the Gas Safety Ordinance, Electricity Ordinance and relevant legislation. • Understand that the categorisation, manufacture, use, storage, recovery, disposal and transportation of dangerous chemicals are subject to being controlled under the Dangerous Goods Ordinance.

	2. Performance (Comply with the operating guidelines on occupational safety and health)
	• Comply with the organisation's established safety operating guidelines to perform job duties safely, to safeguard the individual's and others' safety, such as:
	  ○ Ensure that relevant work is carried out in an appropriate working area with proper safety gear
	  ○ Understand the potential risks of carrying out relevant work
	  ○ Determine if one possesses the capability to carry out the work
	  ○ Ensure that work is carried out under authorisation
	  ○ Familiar with relevant emergency and contingency measures of the work
	• Ensure that the work is carried out according to the requirements under the Occupational Safety and Health Ordinance, such as:
	  ○ The environmental requirements of workshops
	  ○ The use of personal protective equipment
	  ○ The management of dangerous chemicals
	  ○ The requirements of load bearing equipment
	• Understand the different risks involved in different regions within the operating places; and be familiar with the risks involved in one's capacity.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is: • Capable of complying with the job-related rules and legislation on occupational safety and health in routine work to prevent accidents; • Capable of mastering the potential risks involved in the operating places and the work carried out therein; also familiar with the emergency and contingency measures to be implemented in one's capacity; • Capable of ensuring that work is carried out according to the requirements under the Occupational Safety and Health Ordinance; and • Capable of ensuring that work is carried out under authorisation and undertaken in appropriate working areas and by proper procedures.
Remark	(This UoC replaced 108802L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Transport vehicles
Code	111657L2
Range	This unit of competency is applicable to all vehicle service workshops, indoor and outdoor car parks. Practitioners should be able to safely deliver new and used vehicles to designated locations.
Level	2
Credit	1 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Storage of vehicle) • Understand the various risks caused by vehicle transportation, such as traffic accidents and accumulation of vehicle exhaust fumes. • Understand the application of car transporters, tow and flatbed delivery trucks. • Master the driving controls of various vehicle types. • Understand the special measures against the vehicles parking in indoor and outdoor environments for a long time, and the different means of vehicle delivery. 2. Performance (Carry out the procedure of transport vehicles) • Fill in relevant record in accordance with the established procedure for the collection and storage of vehicles and their keys. • Verify the existence of vehicle registration documents and third-party insurance of the vehicle being delivered. • Drive the vehicles safely and park at a designated location accurately within the congested area. • Correctly choose the means of vehicle transport according to the limitation of terrain, resources availability and conditions of vehicles. • Correctly tie down the vehicles on board or towing dollies when transporting vehicles with delivery trucks. • Observe relevant traffic regulations and safely complete the vehicle collection and storage procedures. • Use trade plate correctly.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of performing the suitable measures against the vehicle parking in an indoor and outdoor environment for a long period, and choosing suitable means of vehicle delivery correctly; • Capable of applying the correct securement procedures for transporting vehicles with delivery trucks. • Capable of verifying the existence of vehicle registration documents and third-party insurance of the vehicle being delivered; • Capable of following the procedure of the collection and storage of vehicles and their keys; and • Capable of driving vehicles to a destination safely.

Remark	The practitioner with this capability should possess a valid local driving licence for the type of vehicle concerned. (This UoC replaced 108785L1)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Identify the structure and operating principle of vehicle systems and components
Code	111663L2
Range	This unit of competency is applicable in workplaces in relation to the vehicle parts management and vehicle servicing. Practitioners should be able to identify the structure and operating principle of various types of vehicles and associated components and explain their effects on vehicle safety and performance.
Level	2
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The system layouts and functions of various types of vehicles, including combustion engine vehicles and electrified vehicles, and their major components) • Differentiate the basics of powertrains amongst vehicle types. • Introduce the basic concepts in system services amongst vehicle types. • Demonstrate the system layouts of various vehicle types and the locations of their major components, including but not limited to fuel supply and control management circuits, the interpretation of wiring circuit diagrams of various low-voltage and high-voltage electrical systems, the application of different cable and wire harnesses, and their protection and conjunction means. • Understand the functions of the major components and their effects on vehicle safety and performance. • Understand the definitions of low-voltage and high-voltage electrical systems onboard.

	2. Performance (Master the operating principle of various vehicle systems and components) • Identify the operating and explain the control principle of various vehicle systems and associated components, including but not limited to: ◦ Engine and mechanical components, including emission control systems ◦ Liquid and gaseous fuel supply and metering systems (for light vehicle only) ◦ Diesel fuel supply and metering systems (for commercial vehicles only) ◦ Engine management systems ◦ Hydraulic brake systems and retardation units (for light vehicles only) ◦ Pneumatic brake systems including articulated vehicle brakes and retardation units (for commercial vehicles only) ◦ Steering systems ◦ Suspension systems ◦ Integrated stability control systems ◦ Transmission systems (including power take-off for commercial vehicles) ◦ Low-voltage electrical systems ◦ Advanced electronic control and driver-assistance systems ◦ Body and chassis components ◦ Rechargeable energy storage system including energy management and external power charging (for electrified vehicles only) ◦ Traction motor and corresponding power modulation and controls (for electrified vehicles only) ◦ Hydrogen fuel cell system including associated components and energy management (for hydrogen fuel cell electric vehicle only) ◦ Heating, ventilation and air-conditioning systems ◦ Wheels and tyres ◦ Fifth-wheel couplings and trailer landing gear (for commercial vehicles only) ◦ Other related systems and components • Differentiate the low-voltage and high-voltage electrical systems onboard, their applications and safety awareness.
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of identifying the system layouts, locations, functions, construction, operating and control principles of various vehicle systems and components, interpreting the fuel supply and wiring circuit diagrams, and explaining their effects on vehicle safety and performance. • Capable of differentiating the low-voltage and high-voltage electrical systems physically and the associated safety awareness.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed a basic engineering sense. (This UoC replaced 108633L1)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Dismantle, replace and re-assemble vehicle system components
Code	111664L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to dismantle, replace and reassemble internal combustion engine (ICE) vehicle system components correctly according to the corresponding vehicle manufacturer's service manual and guidelines under instruction and supervision and provide an oral report
Level	2
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The general ICE vehicle system components) • Identify the names and locations of vehicle system components. • Identify the structure and functions of vehicle systems and associated components. • Apply the procedure of dismantling, replacing and reassembling vehicle system components. • Understand the relevant requirements on road and vehicle safety and health regulations. 2. Performance (Dismantle, replace and reassemble general vehicle system components) • Dismantle, replace and reassemble the vehicle system components correctly according to the vehicle manufacturer's service manual and guidelines under supervision, such as: ◦ Engine and mechanical components, including emission control systems ◦ Liquid and gaseous fuel supply and metering systems (for light vehicles only) ◦ Diesel fuel supply and metering systems (for commercial vehicles only) ◦ Engine management systems ◦ Hydraulic brake systems and retardation units (for light vehicles only) ◦ Pneumatic brake systems, including trailer brakes, and retardation units (for commercial vehicles only) ◦ Steering systems ◦ Suspension systems ◦ Integrated stability control systems ◦ Transmission systems (including power take-off unit for commercial vehicle) ◦ Low-voltage electrical systems ◦ Advanced electronic control and driver-assistance systems ◦ Body and chassis components ◦ Wheels and tyres ◦ Fifth-wheel couplings and trailer landing gear (for commercial vehicles only) ◦ Other related systems and components • Apply the environmental protection laws and regulations and the environmental protection operation guidelines formulated by the organisation when carrying out related procedures. • On completion of work, provide an oral report.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of describing the names, structure, location and functions of various vehicle systems and components correctly; and • Capable of dismantling, replacing and reassembling the vehicle system components correctly according to the vehicle manufacturer's manual and guidelines under supervision and providing an oral report after the work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the capability to use general vehicle servicing tools. The major relevant legislation/rule involved in this unit of competency is as follows: • Waste Disposal (Chemical Waste) (General) Regulation • Factories and Industrial Undertakings (Lifting Appliances and Lifting gear) Regulations (This UoC replaced 108635L1)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Dismantle, inspect and replace the low-voltage vehicle electrical systems and accessories
Code	111665L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to dismantle, inspect, replace and reassemble the components of low-voltage vehicle electrical systems under supervision in routine working environment. They should also be able to conduct functionality tests on the associated components and provide an oral report.
Level	2
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The basic electrical and electronic knowledge, location and working principle of low-voltage vehicle electrical systems and associated components, and the general servicing skills) • Master the general principle of electrical engineering and the applications on vehicles • Understand the basic principle of electronic theory and the applications on vehicles • Identify the names, locations, functions and working principles of low-voltage vehicle electrical systems and their components. • Understand the general testing procedures for determining the normal functions of the low-voltage electrical systems and associated components using the general electrical/electronic tools/equipment. • Master the proper procedures of dismantling, replacing and reassembling components of the low-voltage vehicle electrical systems. • Understanding of the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Dismantle, inspect, replace and reassemble the components of low-voltage vehicle electrical systems) • In accordance with the instructions in the corresponding vehicle manufacturer's service manual and relevant requirements on the environmental protection, occupational safety and health regulations, execute the dismantlement, inspection, replacement and reassembly procedures for the components of low-voltage vehicle electrical systems and their accessories under supervision in a familiar working environment, such as the: ◦ Battery, starter and charging systems ◦ Lighting, signals and meter instrument systems ◦ Wiper, central lock systems and electric window, including sunroof ◦ Anti-theft, audio and visual system ◦ Heating, ventilating and air-conditioning systems ◦ Electronic control systems ◦ Door gear systems (including tail lift control for commercial vehicles) ◦ Other related systems • Conduct performance and safety inspection after the work and provide an oral report.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of explaining the basic electrical and electronic principles and their applications on vehicle electrical and electronic systems; • Capable of describing the names, locations, functions and working principles of low-voltage vehicle electrical systems and components correctly; and • Capable of dismantling, inspecting, replacing and reassembling the components of low-voltage vehicle electrical systems correctly and safely in the routine working environment according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations, and providing an oral report after the work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the skills of using general vehicle servicing tools and the maintenance of electric appliances. (This UoC replaced 108636L1)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Identify the structure and operating principle of motorcycle systems and components
Code	111666L2
Range	This unit of competency is applicable in workplaces in relation to the vehicle parts management and motorcycle servicing. Practitioners should be able to identify the structure and operating principle of motorcycles and associated components and explain their effects on vehicle safety and performance.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The system layouts and functions of various types of motorcycles, including engine-powered motorcycles and electric motorcycles, and their major components) • Demonstrate the system layouts of various motorcycle types and the location of their major components. • Understand the functions of the major components and their effects on vehicle safety and performance. • Identify the low-voltage and high-voltage circuits on various types of motorcycles, including the components and circuit diagrams. • Understand the definitions of low-voltage and high-voltage electrical systems onboard 2. Performance (Master the relevant legal requirements and the operating principle of motorcycles and components) • Explain the operating principle of various major systems and components of motorcycles, such as: ◦ Engine and mechanical components, including emission control systems ◦ Fuel supply and metering systems ◦ Engine management systems ◦ Brake systems ◦ Steering systems ◦ Suspension systems ◦ Transmission systems ◦ Electrical systems ◦ REESS, including battery types and management system (for electric motorcycle only) ◦ Power management for propulsion system (for electric motorcycle only) ◦ Propulsion system ◦ Advanced electronic control systems ◦ Body and chassis components ◦ Other related systems • Differentiate the low-voltage and high-voltage electrical systems onboard, their applications and safety awareness.
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the assessee shall prove that he/she is:

	• Capable of clearly identifying the system layouts and circuitries, locations, functions, construction and operating principles of various motorcycle systems and components. • Capable of differentiating the low-voltage and high-voltage electrical systems physically and the associated safety awareness.
Remark	(This UoC replaced 108642L1)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair the low-voltage battery, charging and starting systems of combustion engine vehicles
Code	111667L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to check the condition of the low-voltage vehicle battery, test and repair the vehicle charging and starting systems safely according to the instructions in the vehicle manufacturer's service manual. They should also be able to conduct functional and performance tests on components, and provide a simple fault report upon completion of work.
Level	2
Credit	2 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of low-voltage batteries, charging and starting systems) • Understand the structure and operating principles of battery, charging and starting systems. • Understand the specification, maintenance and safety rules of batteries and the associated handling methods. • Understand basic electric power transfer and the principle of power generation. • Know about general electrical tools and instruments. • According to the instructions in the vehicle manufacturer's service manual, identify the general checking and repairing procedure for low-voltage battery, charging and starting systems. • Understand the relevant legal requirements on road and vehicle safety and environmental protection.

	2. Performance (Check and repair low-voltage battery, charging and starting systems of combustion engine vehicles) • According to the instructions in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely inspect and repair low-voltage battery, charging, electric supply and starting systems of combustion engine vehicles, including: ◦ Identify the common faults in the low-voltage battery, charging and starting systems by visual inspection ◦ Use specified tools or instruments to inspect and measure the value of specific gravity of electrolyte and the effectiveness of electric discharge, and carry out appropriate maintenance work ◦ Low-voltage battery replacement and charging ◦ Handle and dispose of battery in accordance with environmental protection ordinances • Check and repair the parts/components of vehicle charging and starting systems as well as circuit control components, including dismantling, replacing and reassembling of relevant system components. • Conduct performance and safety inspection after the work and provide a simple fault report focusing on: ◦ Abnormalities ◦ Measurement data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking and repairing low-voltage batteries, charging and starting systems of combustion engine vehicles safely according to the instructions in the vehicle manufacturer's service manual; • Capable of conducting functional and performance tests on components and providing simple fault report upon completion of work; and • Capable of charging and handling (including disposing of) battery in accordance with the requirements of the Occupational Safety and Health Ordinance and environmental protection ordinances.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle electrical systems servicing. (This UoC replaced 108651L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Use general welding equipment
Code	111668L2
Range	This unit of competency is applicable in vehicle body servicing and vehicle body assembling workshops. Practitioners should be able to use welding equipment correctly under instructions, such as Oxyacetylene Welding/cutting, Gas Metal Arc Welding (MIG/TIG) and Resistance Spot Welding (SPOT) to perform general welding process and the relevant requirements on safety and health regulations.
Level	2
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Equipment and safety rules of Oxyacetylene Welding, MIG/TIG and SPOT)
	• Identify the hazards caused by the process of Oxyacetylene Welding/ cutting, MIG/TIG and SPOT, such as:
	  ○ electric shock
	  ○ fire and explosion
	  ○ gas and smoke
	  ○ harmful to eyesight
	  ○ being burnt.
	• Understand the code of practice and safety guidelines on the operation of Oxyacetylene Welding/ cutting, MIG/TIG and SPOT.
	• Understand the welding parameters affecting weld seams, such as:
	  ○ Gas flow
	  ○ Welding current
	  ○ Welding speed
	  ○ Welding voltage
	  ○ The angle of welding gun.
	• Understanding of the relevant requirements on safety and health regulations.
	2. Performance (Use welding equipment to conduct welding)
	• Examine the condition of the workplace to ensure that welding work is performed in a suitable working environment and appropriate protective measures are adopted.
	• Select welding equipment and materials such as welding rods correctly.
	• Operate welding equipment and employ correct welding method and procedure to prevent any flaws on the surface of the welding seams.
	• Use suitable tools for grinding.
	• Examine the welding joints upon completion of work.
	• Comply with the legislative requirements of Oxyacetylene Welding, MIG/TIG and SPOT, as well as relevant working, safety and health guidelines.

Assessment Criteria	The integrated outcome requirements of this unit of competency are

	that the practitioner being assessed shall prove that he/she is: • Capable of using welding equipment to carry out welding procedure complying with the relevant requirements on safety and health regulations safely in accordance with the instructions in the manufacturer's user manual; and selecting suitable materials and tools necessary for welding process; and • Capable of checking the welding seams upon completion of work.
Remark	The relevant ordinances/rules involved in this unit of competency are as follows: • Code of Practice-Safety and Health at Work for Gas Welding and Flame Cutting • Code of Practice-Safety and Health at Work for Manual Electric Arc Welding • Dangerous Goods Ordinance ◦ (This UoC replaced 108643L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair front and rear windscreens
Code	111669L2
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to dismantle and install front and rear windscreens correctly according to the instructions in the vehicle manufacturer's servicing manual and installation instructions, providing written report after the work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of vehicle • windscreens) • Understand the materials, structure, specification and legislative requirements of windscreens • Understand the installation and dismantling procedure of windscreens and their attachments, such as heat conducting wires and antennas. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Remove and replace windscreens) • Capable of using special tools for removal and replacement of windscreens. • Remove and reinstall windscreens and attachments safely according to the instructions in the vehicle. manufacturer's installation and servicing manual as well as the supplier's specification. • According to instructions, remove and connect relevant wires correctly. • Conduct water tests and test the operation of attachments upon completion of work and provide written report focusing on: ◦ Abnormalities ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of dismantling and installing vehicle windscreens and attachments safely according to the instructions in the vehicle manufacturer's servicing manual; and • Capable of conducting water tests according to the manufacturer's specification upon completion of work and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle body servicing. (This UoC replaced 108658L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and mend the metallic panels of vehicle body
Code	111670L2
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to check and mend the metallic panels of vehicle body safely according to the instructions in the vehicle manufacturer's servicing manual. They should also be able to conduct basic tests on components upon completion of work and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Properties of metallic panels and tools) • Understand the properties of metallic panels, including the changes under high temperature. • Understand the tools for repairing. metallic panels and the operating method • Understand the water-proofing devices, heat insulation devices, sound reduction devices, vibration dampers and anti-rust devices used in vehicle body. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Mend and check the metallic panels of vehicle body) • Dismantle and install the metallic panels of vehicle body or other simple components according to needs to facilitate the repairing of damaged metallic panels. • Select appropriate tools to mend the concave surface of metallic panels. • Use appropriate welding method and procedure to repair metallic panels and ensure that work is carried out in suitable environment and appropriate protective measure is adopted. • Select appropriate metallic sheet to mend the vehicle body. • Use the tools correctly for grinding. • Adopt appropriate working procedure to maintain the functions of the vehicle, such as water-proofing, heat insulation, sound reduction, vibration dampening and anti-rust. • Conduct inspection and dimensional check of the metallic panels of vehicle body and basic tests on relevant components according to the manufacturer's specification upon completion of work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting appropriate tools and working procedure to check and mending the metallic panels of vehicle body according to the instructions in the vehicle manufacturer's servicing manual; and

	• Capable of conducting inspection and dimensional check of the metallic panels of vehicle body and basic tests on relevant components according to manufacturer's specification and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of Oxyacetylene Welding and MIG/TIG as well as basic vehicle body structure. (This UoC replaced 108661L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Remove paint and process surface treatment on metallic panel
Code	111671L2
Range	This unit of competency is applicable in vehicle body painting workshops. Practitioners should be able to carry out the procedure for removing paint and processing surface treatment on metallic panel according to working instructions or the guidelines in the vehicle manufacturer's servicing manual, providing written report after the work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Paint remover and cleanser) • Know the impact of paint remover and cleanser on skin and on the materials of vehicle body. • Know the content of Safety Data Sheet (SDS) with respect to paint remover and cleanser, including protective measures. • Understanding of the relevant legal requirements on environment protection. 2. Performance (Carry out the procedure for paint removal and surface treatment on metallic panel) • Carry out the established working instructions on dangerous goods, pollutants and chemical waste. • Observe the condition of the workplace and carry out the procedure for paint removal and surface treatment, including the use of air pollution control device. • Select and use suitable tools and instruments. • Complete the work according to working instructions, the guidelines in the vehicle manufacturer manual and the code of practice for occupational safety and health as well as environmental protection. • Handle chemical waste upon completion of work and provide written report focusing on: ◦ Abnormalities ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the characteristics of paint remover and cleanser; and • Capable of completing the working procedure of paint removal and surface treatment on metallic panel according to working instructions, the guidelines in the vehicle manufacturer manual and the code of practice for occupational safety and health as well as environmental protection requirements and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of handling chemicals. (This UoC replaced 108664L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Carry out body filling and sanding
Code	111672L2
Range	This unit of competency is applicable in vehicle body vehicle painting workshops. Practitioners should be able to carry out body filling and sanding according to working instructions or the guidelines in the vehicle manufacturer's servicing manual and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Body fillers and sanding equipment) • Understand the composition and characteristics of body fillers. • Understand the functions and respective operating rules for sanding equipment. • Understand the characteristics as well as the pros and cons of dry sanding and wet sanding. • Understand the content of Safety Data Sheet (SDS) with respect to cleanser and chemicals including protective measures. • Understanding of the relevant legal requirements on environment protection. 2. Performance (Carry out body filling and sanding) • Carry out various working procedures according to environmental protection ordinances and requirements. • Carry out the established operating guidelines on dangerous goods, pollutants and chemical waste; handle and dispose chemical waste according to the Code of Practice for Chemical Waste Producer. • Observe the working environment when carrying out body filling, dry sanding or wet sanding procedure; and capable of minimizing material consumption. • Follow procedures regarding drainage of water during the work progress as to comply with the standard of sewage disposal licence under the Water Pollution Control Ordinance; and should control the use of cleanser, fresh water and chemical substances. • Complete the working procedure according to working instructions, product manufacturer's guidelines and the requirements of Occupational Safety and Health Ordinance as well as environmental protection ordinances. • Conduct inspection upon completion of body filling and sanding procedures to ensure that the requirements for carrying out painting procedure are met and provide written report focusing on: ◦ Abnormalities ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of carrying out body filling and sanding procedures effectively according to working instructions, the guidelines in vehicle manufacturer manual, the occupational safety and health / environmental protection ordinances; and

	• Capable of conducting inspection upon completion of body filling and sanding procedures to ensure that the requirements for carrying out painting procedure are met and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of how to handle chemicals and operate general sanding tools and instruments. (This UoC replaced 108665L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Carry out vehicle body masking and painting (include plastic components) process
Code	111673L2
Range	This unit of competency is applicable in vehicle painting workshops. Practitioners should be able to carry out vehicle body masking, painting (include plastic components) process according to working instructions or the guidelines in the vehicle manufacturer's servicing manual and providing written report,
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Masking/Painting materials and spray guns) • Know the characteristics of typical masking paper and masking tape as well as associated equipment • Know the composition and characteristics of primer paint and finish paint and plastic paint including waterborne paint. • Know the characteristics and operating principles of various kinds of spray guns, including high volume low pressure (HVLP) spray guns. • Know the content of Safety Data Sheet (SDS) with respect to paints, catalysts and dissolvent, including protective measures. • Understand the process of body masking and the techniques of removing masking tape. • Understand the characteristics of the materials of different workpiece, surface preparations, paint selection and painting methods. • Understand the painting process and the reasons for paint defects. • Understanding of the relevant legal requirements on environment protection. 2. Performance (Carry out masking/painting process) • Select and use appropriate personal protective equipment correctly. • Identify the regions that need to be covered during the painting process. • Observe the condition of the workplace and should carry out masking and painting process in the spray booth equipped with anti-pollution control device, and capable of minimizing material consumption. • Select and use appropriate masking paper and tape to cover the areas that need to be protected. • Select and use suitable tools and instruments; and apply relevant painting techniques correctly regarding the characteristics of different spray guns. • Operate spray booth； infra-red car paint curer, also control the temperature and time accurately. • Complete the painting process according to the guidelines in the vehicle manufacturer manual, the occupational safety and health as well as environmental protection ordinances and Factories and Industrial Undertakings (Spraying of Flammable liquids) Regulations. • Conduct inspection upon completion of painting process to ensure that no paint defects and provide written report focusing on: • Abnormalities • Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting and adjusting spray guns and other devices according to working instructions or the guidelines in the vehicle manufacturer's servicing manual to carry out masking/painting process; and • Capable of conducting inspection upon completion of painting process to ensure that no paint defects and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of how to handle chemicals and operate commonly used spraying tools and instruments. (This UoC replaced 108666L2, 108667L2 and 108673L1)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the application of tools and equipment for vehicle servicing
Code	111674L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to apply tools and equipment for vehicle servicing tasks safely and correctly according to the instructions in the vehicle manufacturer's service manual or the user guide provided by the producer of tools and equipment.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Tools and equipment for vehicle servicing) • Understand the structure and operating principles of the tools and equipment for vehicle servicing. • Master the function and application of the tools and equipment, including the care procedures. • Understand the instructions in the vehicle manufacturer's servicing manual as well as the producer's user guide of special tools and equipment for vehicle servicing. 2. Performance (Apply tools and equipment for vehicle servicing) • Apply tools and equipment for vehicle servicing, including the examination and rectification of various vehicle systems and components, according to the instructions in the vehicle manufacturer's service manual or the user guide of the tools and equipment for vehicle servicing tasks, such as: ◦ General mechanic and electrician hand tools ◦ Pneumatically and electrically powered tools ◦ Precision electrical and mechanical measuring equipment ◦ Various kinds of engine management system analysers and hand-held testers ◦ Exhaust emission testers, including gas analysers and opacimeters ◦ Chassis power testers and roller brake testers ◦ Various kinds of vehicle system hydraulic testing instruments ◦ Vehicle lifting and supporting gears ◦ Other related tools and equipment • Use of the special tools and equipment provided by vehicle manufacturers. • Employ suitable tools and equipment according to relevant requirements on environmental protection, occupational safety and health regulations. • Carry out the general maintenance procedures for the tools and equipment.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting and applying appropriate tools and equipment for vehicle servicing tasks according to the instructions in the vehicle manufacturer's service manual or the user guide provided by the producer of tools and equipment; • Capable of examining and repairing various vehicle systems and components according to the instructions on how to use the tools and equipment for vehicle servicing tasks correctly; and

	• Capable of conducting the general maintenance procedures for keeping the normal working condition of the tools and equipment.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed general knowledge of vehicle servicing. The major legislation/code involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations • Factories and Industrial Undertakings Regulations • Occupational Safety and Health Regulation (This UoC replaced 108634L1 and 108645L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair the low-voltage electrical systems onboard
Code	111675L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to check and repair various vehicle low-voltage electrical systems safely according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be capable of conducting rectification and tests on components and providing written report upon completion of work.
Level	2
Credit	8 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Structure and basic operating principles of various vehicle low-voltage electrical systems)
	• Comprehend the principles of electricity and electronics.
	• Identify the function and application of general electronic / electric tools and equipment for circuit / component testing.
	• Understand the requirements of local legislative provisions in relation to various vehicle low-voltage electrical systems, such as:
	  ◦ lighting, signalling and warning systems;
	  ◦ infotainment and communication systems;
	  ◦ security and monitoring systems; and
	  ◦ other related systems/components.
	• Understand the electrical circuits, structure and basic operating principles of various vehicle low-voltage electrical systems, including their sensors and major components, such as:
	  ◦ interior and exterior lighting, signalling and warning systems;
	  ◦ windscreen wiper, electrical operating door, seat, sunroof and window systems;
	  ◦ security and monitoring systems;
	  ◦ infotainment and communication systems; and
	  ◦ other related electronic/electrical systems.
	• According to the instructions in the vehicle manufacturer's service manual, comprehend the general checking and repairing procedure for the various vehicle low-voltage electrical systems as well as their major components.
	• Understanding of the relevant legal requirements on road and vehicle safety and environmental protection.

	2. Performance (Check and repair various vehicle low-voltage electrical systems)
	• According to the instructions in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely check and repair various low-voltage electrical systems with the application of specified tools and equipment, including:
	  ◦ Identify the general circuitry and component problems for the:
	  ▪ lighting, signalling and warning systems;
	  ▪ windscreen wiper, electrical operating door, seat, sunroof and window systems;
	  ▪ security and monitoring systems;
	  ▪ infotainment and communication systems; and
	  ▪ other related electrical systems.
	  ◦ Conduct functional tests to eliminate the failure problem of the systems/components.
	  ◦ Conduct dismantlement, replacement, reassembly and rectification of relevant system components and accessories.
	• Conduct performance and safety inspection after the work and provide written report focusing on:
	  ◦ Abnormalities
	  ◦ Measured data or system performance
	  ◦ Major decisions for problem solving
	• Identify the low-voltage electrical systems for compliance with relevant regulations and ordinances in accordance with relevant local legislative provisions, including:
	  ◦ lighting, signalling and warning systems;
	  ◦ security and monitoring systems; and
	  ◦ infotainment and communication systems.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking the circuitries of various vehicle low-voltage electrical systems and identifying the associated component faults according to the instructions in the vehicle manufacturer's service manual and relevant requirements on environmental protection, occupational safety and health regulations, including the: • lighting, signalling and warning systems, • wiper, door, seat, sunroof and window systems, • security and monitoring systems, and • infotainment and communication systems; • Capable of conducting rectifications and performance tests safely on the above low-voltage electrical systems and respective components and filling out a work report upon completion of the work; and • Capable of identifying the above low-voltage electrical systems if they meet the requirements as specified under relevant legislative provisions of Hong Kong and the vehicle manufacturer's service manual.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed comprehensive knowledge of vehicle electronic and electrical systems servicing. The major ordinance involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health Ordinance (This UoC replaced 108652L2, 108653L2, 108654L2 and 108686L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Car detailing and waxing work
Code	111676L2
Range	This unit of competency is applicable in vehicle workshops or car detailing shops. Practitioners should be able to carry out cleaning, waxing and other cosmetic maintenance work for vehicle body and interior finishing according to working instructions and procedure and providing written report after the work. (The use of automatic car washing device is not included in this unit of competency)
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle detailing on vehicle body and compartment) • Know the vehicle detailing work procedure for general vehicle body and compartment. • Know the functions and operating procedure of general equipment (e.g. wax machine, vacuum cleaner and steamer.) for vehicle detailing. • Understand the application of typical types of cleanser for vehicles. • Understand the cleanser/caring and waxing products applicable for different materials. • Understand general cleanser and the content of the Safety Data Sheet (SDS) with respect to chemicals, including protective measures. • Strictly follow the procedure of handling customers' property in vehicles and must not take or use those property. • Understanding of the relevant legal requirements on environment protection. 2. Performance (Carry out the vehicle detailing procedure for the vehicle body and compartment) • Comply with the established working instructions on chemicals and sewage. • Perform vehicle detailing job according to working instructions and procedure or the guidelines in the vehicle manufacturer manual, including: ◦ Wash the vehicle body and clean the compartment ◦ Use prescribed cleanser, car wax, vehicle caring products and caring equipment to carry out caring duties for the vehicle body and the compartment by hand ◦ Use prescribed vehicle caring products to mend and take care of the damages on the vehicle body and on the compartment • Provide written report focusing on: ◦ Abnormalities ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of washing the vehicle body and the compartment according to working instructions; and • Capable of using prescribed products/equipment to perform vehicle detailing job on the vehicle body and the compartment and providing written report after the work.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the basic knowledge of vehicle parts and know how to handle chemicals for washing purposes and operate general cleaning/vehicle detailing equipment. (This UoC replaced 108669L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	The safety setup for the service of the pressurized gaseous fuel systems on vehicles
Code	111677L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to set up a safe working environment and tools for the service of the pressurised gaseous fuel systems on vehicles according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, the code of practice on gas safety, occupational safety and health regulations. They should also be able to handle potential hazards on the systems and provide a simple work report upon completion of work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Personal protection and first-aid equipment, service tools and equipment, workplace setup requirements for the services of pressurised gaseous fuel systems on vehicles) • Understand the hazards and safety precautions for the service of pressurised gaseous fuel systems, including liquefied petroleum gas (LPG) and hydrogen (H2), on vehicles. • Identify the functions, serviceability test and application of personal protection and first-aid equipment, service tools and equipment for conducting the service. • Understand the requirements on workplace setup for the relevant service according to the instructions in the corresponding vehicle manufacturer's service manual and guidelines of occupational safety and health and the code of practice on gas safety. • Understanding of the procedures of emergency response, incident reporting and investigation for the pressurised gaseous fuel system on vehicles. 2. Performance (Perform the safety setup for the service of the pressurised gaseous fuel systems on vehicles) • According to the maintenance requirements of manufacturers, periodically inspect the adaptability and serviceability of personal protection and first-aid equipment, service tools and equipment for the service, ventilation system, combustible gas detection and warning systems. • According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of the code of practice on gas safety, environmental protection, occupational safety and health, set up an isolated servicing area with barricades and warning signage for the service, and identify the suitable location for temporarily keeping away the cell phones, key fobs and cards from the vehicles concerned. • Determine the effectiveness of the safety setup and provide writ a simple work report focusing on the deficiencies and corresponding actions taken.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of inspecting the adaptability and serviceability of personal protection and first aid equipment, service tools and equipment for the service of pressurised gaseous fuel systems on vehicles according

	to the instructions of manufacturers and the relevant requirements on occupational safety and health regulations and the code of practice on gas safety; • Capable of setting up and maintaining a safe working environment for the service of pressurised gaseous fuel systems on vehicles and performing contingency procedures, incident reporting and investigation according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, the code of practice on gas safety, occupational safety and health regulations; and • Capable of reviewing the effectiveness of safety setup for the service of pressurised gaseous fuel systems on vehicles and providing a simple work report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge in the servicing of hybrid electric and electrified vehicles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Code of Practice on Gas Safety • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Build the body frame
Code	111678L2
Range	This unit of competency is applicable in vehicle body building workshops. Practitioners should be able to build the body frame in accordance with working instructions and working drawing as well as actual worksite condition and providing written report.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure of vehicle body) • Understand different methods of connecting vehicle body components. • Understand the structure of original chassis and the body frame to be built. • Understand the procedure for processing original chassis and body frame building. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Build the body frame) • Safely build the body frame according to the content in the working drawing and the requirements of occupational safety and health as well as that of environmental protection, including: ◦ Observe actual worksite condition to ensure that the building procedure is carried out in a proper working environment ◦ Select and use appropriate personal protective equipment and the safety equipment for working at height ◦ Select suitable tools and materials, including the use of fixtures, to perform vehicle body building duty ◦ Align body frame according to specification. • Inspect and measure the workpiece upon completion of work to ensure that the requirements of manufacturing specification are met and provide written report focusing on: ◦ Abnormalities ◦ Measured data ▪ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting suitable tools and materials correctly according to the content in the working drawing; • Capable of building the body frame according to working procedure and working instructions; and • Capable of inspecting and measuring the work-piece upon completion of work, providing written report after the work

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of how to read working drawing, select tools and materials as well as welding techniques. (This UoC replaced 108759L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Assemble the floor, windows, passageways, stairs and doors of vehicle
Code	111679L2
Range	This unit of competency is applicable in vehicle body building workshops. Practitioners should be able to assemble the floor, passageways, stairs as well as routine and emergency doors of vehicle in accordance with working instructions and working drawing as well as actual worksite condition, providing written report after the work
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Drawings of general floor, passageways, stairs and doors of vehicle.) • Understand the content of the working drawings of general floor, passageways, stairs and doors of vehicle, including layouts, symbols, installation guidelines as well as installation and commissioning specifications. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Assemble general floor, passageways, stairs and doors of vehicle) • Safely assemble the floor, passageways, stairs and doors of vehicle according to the content in the working drawing and the requirements of occupational safety and health as well as that of environmental protection, including: ◦ Observe actual worksite condition to plan the procedure for assembling the floor, passageways, stairs and doors of vehicle. ◦ Select and use appropriate personal protective equipment correctly ◦ Select suitable tools as well as securing and locking devices to perform the duty of assembling the floor, passageways, stairs and doors of vehicle. ◦ Select suitable materials to perform the duty of assembling the floor, passageways, stairs and doors of vehicle. ◦ Rectify and match the positions according to specification • Capable of inspecting and measuring the workpiece upon completion of work to ensure that the requirements of manufacturing specification are met and providing written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting suitable tools and materials correctly according to the content in the working drawing;

	• Capable of assembling the floor, passage-way, stairs and doors of vehicle, etc. according to working procedure and working instructions; and • Capable of inspecting and measuring the work-piece according to manufacturing specification, providing written report after the work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of how to read working drawing. (This UoC replaced 108760L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Assemble seats and interior fittings
Code	111680L2
Range	This unit of competency is applicable in vehicle body building workshops. Practitioners should be able to carry out assembling procedure for general seats and interior fittings in accordance with working instructions and working drawing as well as actual worksite condition, providing written report after the work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operation of the seats and interior fittings of vehicles) • Understand the structure of vehicle body. • Understand the structure and basic operation of the seats and interior fittings of vehicles. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Assemble the seats and interior fittings of vehicles) • Safely assemble the seats and interior fittings of vehicles according to the content in the working drawing and the requirements of occupational safety and health as well as that of environmental protection, including: ◦ Observe actual worksite condition to ensure that the assembling procedure for the seats and interior fittings of vehicles is carried out in a proper environment ◦ Carry out the assembling procedure according to the respective rules of the workshops ◦ Use correct methods to connect relevant wires • Capable of inspecting and measuring the work-piece upon completion of work to ensure that the requirements of manufacturing specification are met and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting suitable tools and materials according to the content in the working drawing; • Capable of assembling the seats and interior fittings of vehicles according to working procedure and instructions; and • Capable of inspecting and measuring the work-piece upon completion of work, providing written report after the work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of how to read working drawing and select tools as well as the basic knowledge of vehicle electric systems.

	(This UoC replaced 108761L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Produce vehicle body building fixtures
Code	111681L2
Range	This unit of competency is applicable in vehicle body building workshops. Practitioners should be able to produce vehicle body building fixtures and devices in accordance with working instructions, production and design drawings, and providing written report after the work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (General production and design drawings) • Understand the content of general production and design drawings for vehicle body, such as selecting materials, tools, instruments, production process and establish acceptance criteria. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Produce general vehicle body assembling fixtures) • Carry out the procedure for producing vehicle body assembling fixtures in accordance with working instructions, production drawings and design drawings, including: ◦ Select appropriate personal protective equipment correctly ◦ Observe worksite condition to ensure that the procedure for producing vehicle body assembling fixtures is carried out in a proper working environment ◦ Select suitable materials, tools and instruments to produce the main piece of vehicle body and capable of minimizing material consumption ◦ Capable of using suitable measuring tools to ensure that the fixtures are produced according to acceptance criteria • Conduct basic tests on components upon completion of work and provide written report focusing on: ◦ Abnormalities ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the content of general production and design drawings for vehicle body; and • Capable of selecting suitable materials, tools and instruments correctly to produce vehicle body assembling fixtures according to production drawings, design drawings and working instructions. • Capable of inspecting and testing the components upon completion of the assembling procedure and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of how to handle general materials as well as read production and design drawings.

	(This UoC replaced 108764L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Assemble vehicle body panels
Code	111682L2
Range	This unit of competency is applicable in vehicle body building workshops. Practitioners should be able to assemble vehicle body panels onto the frame in accordance with working drawing and actual worksite condition, providing written report after the work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Install vehicle body panels) • Understand various kinds of securing and locking methods for vehicle body panels. • Understand the installation procedure for vehicle body panels. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Assemble vehicle body panels) • Safely assemble vehicle body panels according to the content in the working drawing and the requirements of occupational safety and health as well as that of environmental protection, including: ◦ Observe actual worksite condition to ensure that the assembling procedure for vehicle body panels is carried out in a proper working environment ◦ Select and use appropriate personal protective equipment and the safety equipment for working at height ◦ Select suitable tools and materials to perform the duty of assembling vehicle body panels ◦ Carry out the work of waterproofing, rust proofing, noise reduction, vibration dampening and heat-insulating ◦ Align panels according to specification. • Inspect and measure the workpiece upon completion of work to ensure that the requirements of manufacturing specification are met and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting suitable tools and materials correctly according to the content in the working drawing; • Capable of assembling vehicle body panels according to working procedure and instructions; and • Capable of checking and measuring the work-piece upon completion of work. Providing written report after the work.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of how to read working drawing and select tools and materials. (This UoC replaced 108765L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Dismantle, inspect and repair the components of liquefied petroleum gas systems onboard
Code	111683L2
Range	This unit of competency is applicable in the designated work bay of vehicle service workshops. Practitioners should be able to dismantle, inspect and repair the components of liquefied petroleum gas systems safely according to the instructions in the vehicle manufacturer's service manuals and relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct system tests and complete a simple fault report upon completion of work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various liquefied petroleum gas systems on vehicles) • Understanding of the nature and characteristics of liquefied petroleum gas for vehicular application, the handling and safety precautions. • Understanding of the structure and basic operating principles of various types of liquefied petroleum gas systems (e.g., mixer, injection, etc.) • Understanding of the application of liquefied petroleum gas concentration meters to ensure a combustible gas-free environment. • With reference to the corresponding vehicle manufacturer's service manual, understand the inspection and repair procedures of the system components of different types of liquefied petroleum gas systems. • Understanding of relevant laws and regulations governing the handling of vehicle liquefied petroleum gas and the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Conduct dismantlement, inspection and repair for the system components of various liquefied petroleum gas systems on vehicles) • Correctly apply the liquefied petroleum gas concentration meter to ensure a combustible gas-free working environment. • Safely conduct the dismantlement and replacement of the system components of liquefied petroleum gas systems, including fuel tanks, according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection. • Safely conduct inspection and repair of the system components of liquefied petroleum gas systems to serviceable conditions according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection. • Accurately verify the serviceability of system components after the completion of repairing process and provide a simple fault report for abnormalities, measuring data and decisions made. • Handle liquefied gas system components according to relevant local statutory requirement.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of arranging the dismantlement, inspection and repair of the liquefied petroleum gas system onboard and associated components in an appropriate workplace equipped with suitable special service tools and relevant safety measures to ensure a combustible gas-free environment throughout the process; • Capable of safely conducting the dismantlement and replacement of various types of liquefied petroleum gas system components, including fuel tanks, with reference to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of safely conducting the inspection and repair of the system components of various types of liquefied petroleum gas systems with reference to the instructions in the associated vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of providing a simple fault report for abnormalities, measuring data and decisions made upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of inspecting and repairing various types of fuel systems on liquefied petroleum gas vehicles. When conducting the work on liquefied petroleum gas fuel system, the practitioner concerned should be a recognized competent person in liquefied petroleum gas vehicle. The major legislations/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Gas Safety Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check, repair and replace tyres
Code	111684L2
Range	This unit of competency is applicable in vehicle service workshops and workplaces that provide tyre services. Practitioners should be able to check, mend, repair, and replace vehicle tyres (excluding those on electric motorcycles featuring in-wheel motors), valves, and rims safely according to the instructions in the corresponding manufacturer's manual. They should also be capable of conducting basic tests on components and providing a simple work report upon completion of the task.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure, functions and features of various wheel assemblies of vehicles) • Master the structure, codes, functions and features of the tyres and rims of vehicles, and the adaptation to different vehicle types. • Master the structure, types and functions of the tyre valves of vehicles. • Good understanding of the general tools/equipment for the maintenance of the tyres, valves, and rims of vehicles with the instructions given by the corresponding manufacturers. • Good understanding of the general checking and servicing procedures for the tyres, valves, and rims of vehicles with reference to the instructions given by the corresponding manufacturers. • Understand the relevant legal requirements on road and vehicle safety and environmental protection.

	2. Performance (Check, repair, replace and handle the tyres and rims of vehicles) • According to the instructions in the tyre, valve, and rim manufacturer's manual, the legal requirements of relevant road and vehicle safety, occupational safety and health as well as environmental protection, safely check, mend, repair, and replace the tyres, valves, or rims of vehicles, including: ◦ Inflate the tyre pressure correctly according to the information and instructions provided by vehicle manufacturers. ◦ Accurately inspect the tyre structure and measure the depth of tread patterns to make a correct assessment of the tyre condition. ◦ Inspect the airtight function of the tyre valve. ◦ Accurately detect and assess tyre leakage condition for mending work to be done ◦ Accurately check and test the damage of rims and measure the out-of-roundness to make a correct assessment of rim condition. ◦ Correctly use tyre changer to remove, replace and install tyres and rims. ◦ Use wheel balancer to rectify the wheel imbalance. • Install the tyres correctly according to the tyre manufacturer's guide and the requirements of the Road Traffic Ordinances of Hong Kong. • Collect, recover, re-tread, re-groove, handle and dispose of used tyres according to the code of practice for environmental protection and the Dangerous Goods Ordinance. • Measure and assess tyre wear according to relevant provisions of the Road Traffic Ordinance of Hong Kong. • Identify the legality of the combination of tyres on vehicle. • Visually inspect the normality of relevant vehicle components when installing or removing the wheels. • Conduct performance and safety inspection after work and provide a simple work report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of disposing used tyres according to environmental protection legislation and the organisational requirements on environmental protection; • Capable of checking, measuring and assessing the condition of vehicle wheel assembly and determining the validity of wheel combinations in accordance with the relevant provisions of the Road Traffic Ordinance; and • Capable of checking, repairing and replacing various vehicle tyres, valves, and rims safely according to the instructions in the manufacturer's service manual and providing a simple work report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle and comprehensive knowledge of wheel assembly. They should also possess the operational competency of garage jack and associated vehicle support stands as well as road wheel removal and replacement. The major legislation / rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations – Wheels and Tyres • Waste Disposal Ordinance • Dangerous Goods Ordinance • (This UoC replaced 108646L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Carry out Routine Vehicle Maintenance
Code	111685L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to carry out routine vehicle maintenance work safely according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct performance and safety tests on systems according to the manufacturer's specification and provide a simple report upon completion of work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Procedure to carry out routine vehicle maintenance work) • In accordance with the respective vehicle manufacturer's service manual, understand the procedures to carry out routine vehicle maintenance work, such as "Quick Service", "Standard Service", etc. • Familiar with the use of tools and equipment to carry out routine vehicle maintenance work. • Understand the relevant legal requirements on road and vehicle safety and environmental protection.

	2. Performance (Carry out routine vehicle maintenance work) • In accordance with the respective vehicle manufacturer's service manual, Hong Kong Road Traffic Ordinance, requirements of occupational safety and health, and environmental protection, carry out the routine maintenance work, such as functionality checking and consumable materials replacement, including: ◦ Engine unit and sub-systems ◦ Liquid and liquefied gaseous fuel supply and metering systems (for light vehicles only) ◦ Diesel and pressurised gaseous fuel supply and metering systems (for commercial vehicles only) ◦ Engine management system ◦ Hydraulic brake systems and retardation units (for light vehicles only) ◦ Pneumatic brake systems, including trailer brakes and retardation units (for commercial vehicles only) ◦ Steering system ◦ Suspension system ◦ Transmission system (including power take-off for commercial vehicle) ◦ Battery and electrical system, including heating, ventilation and air conditioning ◦ Safety restraint system ◦ Body and Frame unit ◦ Wheels and tyres ◦ Fifth-wheel couplings and trailer landing gear (for commercial vehicles only) • Conduct performance and safety inspection after the work and provide a simple work report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of carrying out routine vehicle maintenance work safely for various vehicle systems and components according to the instructions in the respective vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of inspecting the performance of various systems according to the manufacturer's specification and relevant legal requirements; and • Capable of conducting safety inspections and providing a simple work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of the functions of the vehicle systems. The major legislation/code involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations (This UoC replaced 108641L1)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Pre-delivery Preparation and Inspection of vehicle
Code	111686L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to carry out vehicle pre-delivery preparation and inspection safely according to the instructions in the respective vehicle manufacturer's manual and the relevant requirements on environmental protection, occupational safety and health regulations, and provide simple written report upon completion of work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Requirements to carry out vehicle pre-delivery preparation) • According to the instructions in the vehicle manufacturer's manual, understand the requirements to carry out the vehicle pre-delivery preparation work. • Know the documents needed for vehicle pre-delivery. • Understand the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Carry out vehicle pre-delivery preparation and inspection work) • In accordance with the respective vehicle manufacturer's service manual, legal requirements of occupational safety and health and environmental protection, to carry out the vehicle pre-delivery preparation and inspection work safely, including but not limited to: ◦ Engine unit and sub-systems ◦ Fuel supply and exhaust systems, including emission control ◦ Engine management system ◦ Brake system, including retardation unit ◦ Steering system ◦ Suspension system ◦ Transmission system including wheels and tyres ◦ Battery and electrical systems, including heating, ventilation and air conditioning ◦ Advanced electronic control and driver-assistance systems ◦ Safety restraint system ◦ Body, frame and mounted equipment. • Preparation of the documents needed for vehicle pre-delivery. • Conduct safety inspection after work and provide a simple written report, focusing on: ◦ Abnormalities ◦ Measuring data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of carrying out vehicle pre-delivery preparation and inspection work safely according to the instructions in the respective vehicle manufacturer's manual, relevant legal requirements and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of preparing the documents needed for vehicle pre-delivery; and • Capable of conducting basic safety tests on the vehicle and providing a simple written report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of the functions of the vehicle systems. The major legislation/code involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations (This UoC replaced 108684L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Remove and replace vehicle engine units and components
Code	111687L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to remove and replace vehicle engine units and components safely according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct basic tests on components and provide a simple work report upon completion of work.
Level	2
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Structure and basic operating principles of vehicle engine units and components)
	• Understand the structure and basic operating principles of vehicle engine units and components, including:
	  ○ Engine mechanical systems
	  ○ Cooling systems
	  ○ Intake and exhaust systems, including pressure charging and emission control units
	  ○ Fuel supply and metering systems
	  ○ Lubrication systems
	  ○ Electrical systems, including the ignition system (for spark-ignition engines only)
	• Understand the general checking and repairing procedures for the components with reference to the instructions in the respective vehicle manufacturer's service manual.
	• Understand the relevant legal requirements on road and vehicle safety and environmental protection.
	2. Performance (Remove and replace vehicle engine units and components)
	• According to the manufacturer's service manual and relevant legal requirements concerning occupational safety and health and environmental protection, safely remove and replace vehicle engine units and components, including:
	  ○ Identification of the general problems in vehicle engine units and components by visual inspection
	  ○ Functional test and assessment of the effectiveness of all components
	  ○ Elimination of typical system failures
	• Conduct performance and safety inspection after the work and provide a simple work report, focusing on:
	  ○ Abnormalities
	  ○ Measuring data
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of removing and replacing vehicle engine units and components safely in accordance with the manufacturer service manual, relevant legal requirements and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of conducting basic tests on components and providing a simple work report upon completion of work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle mechanical servicing. The major legislation / code involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations • Factories and Industrial Undertakings (Lifting Appliances and Lifting gear) Regulations (This UoC replaced 108685L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct safety setup for the service of the high-voltage electrical system of electrified vehicles
Code	111688L2
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to set up a safe working environment with suitable tools for the service of the high-voltage electrical system of hybrid electric and electrified vehicles according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to handle potential hazards on the systems and provide written report upon completion of work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Personal protection and first-aid equipment, service tools and equipment, workplace setup requirements for hybrid electric and electrified vehicles, such as battery electric vehicles, hydrogen fuel cell electric vehicles, battery electric motorcycles, etc.) • Understand the hazards and safety precautions for the service of high-voltage electrical systems of hybrid electric and electrified vehicles. • Identify the functions, serviceability test and application of personal protection and first-aid equipment, service tools and equipment for conducting the service. • Understand the requirements on workplace setup for the service according to the instructions in the corresponding vehicle manufacturer's service manual and guidelines of occupational safety and health • Understand the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Perform the safety setup for the service of the high-voltage electrical system of hybrid electric and electrified vehicles) • According to the maintenance requirements of manufacturers, periodically inspect the adaptability and serviceability of personal protection and first-aid equipment, service tools and equipment for the service, such as insulating gloves and footwear, safety mats, face shields, automated external defibrillators, insulated rescue hooks, insulation testers, insulated hand tools and equipment, etc. • According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, set up an isolated servicing area with barricades and warning signage for the service, and identify the suitable location for temporarily keeping away the key fobs and cards from the vehicles. • Determine the effectiveness of the safety setup and provide written report focusing on the deficiencies and corresponding actions taken.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of inspecting the adaptability and serviceability of personal protection and first aid equipment, service tools and equipment for the service of high-voltage electrical systems of hybrid electric and

	electrified vehicles according to the instructions of manufacturers and the relevant requirements on occupational safety and health regulations; • Capable of setting up a safe working environment for the service of high-voltage electrical systems of electrified vehicles according to the instructions in the electrified vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of reviewing the effectiveness of the safety setup for the service of high-voltage electrical systems of electrified vehicles and providing working report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed general knowledge of the servicing of hybrid electric and electrified vehicles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Remove and replace motorcycle powertrain and associated components
Code	111689L2
Range	This unit of competency is applicable in motorcycle service workshops. Practitioners should be able to remove and replace motorcycle powertrains and associated components safely according to the instructions in the motorcycle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct basic tests on components and provide a work report upon completion of work.
Level	2
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (structure and basic operating principles of motorcycle powertrain and associated components)
	• Understand the structure and basic operating principles of motorcycle powertrains and associated components such as:
	  ○ Engine mechanical system
	  ○ Cooling and Lubrication systems
	  ○ Intake and exhaust system
	  ○ Fuel supply and ignition systems
	  ○ Drivetrain
	  ○ Starting and charging systems
	• Understand the structure of non-welded and non-structural motorcycle body panels for powertrain protection, such as fairings, cowlings, mudguards, screens, mirrors, luggage and fittings, etc.
	• With reference to the instructions in the motorcycle manufacturer's service manual and the requirements of relevant provisions under the Road Traffic Ordinance of Hong Kong, understand the general checking, repairing, removing and replacing procedures for the powertrain and associated components.
	• Understand the relevant legal requirements on road and vehicle safety and environmental protection.
	2. Performance (Remove and replace motorcycle powertrain and associated components)
	• According to the instructions in the motorcycle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely remove and replace the motorcycle powertrain and associated components, including:
	  ○ Capable of identifying the general problems in motorcycle powertrains and associated components by visual inspection;
	  ○ Functional test of each powertrain unit and associated components; and
	  ○ Eliminate typical system failure.
	• Conduct performance and safety inspection after the work and provide a work report focusing on:
	  ○ Abnormalities
	  ○ Measured data
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of removing and replacing motorcycle powertrain and associated components safely according to the instructions in the motorcycle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of conducting basic tests on the powertrain units and associated components and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed general knowledge of motorcycle mechanical servicing. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health Ordinance (This UoC replaced 108676L2 and 108680L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Identify the fundamentals of electrified vehicles
Code	111690L2
Range	This unit of competency is applicable in electrified vehicle service workshops. Practitioners should be able to identify the fundamental knowledge of electrical engineering and apply to the electrified vehicles for enhancing electrical safety awareness with reference to the vehicle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to demonstrate the safety practices for electrified vehicle-related tasks and provide an oral report upon completion of work.
Level	2
Credit	4 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Electrical fundamentals and safety gear) • Identify the basics of electricity, including energy transformation devices. • Understand the safety hazards associated with vehicle servicing tasks, the risks and root causes of electrical incidents in electrified vehicles, such as insulation failure, overcurrent or overvoltage operation, etc. • Understand the proper emergency response and equipment to be used in case of electric shock. • Understand the requirements on insulation, colour code, label and ingress protection of cable, wiring harness and connectors for different voltage classes of electrified vehicle systems and components. • Identify the operating voltage of the traction battery and the high-voltage system circuit onboard as well as the application of service/emergency circuit breaker. • Identify the total solutions on high-voltage system safety of electrified vehicles. • Identify the voltage classes of electrified vehicle operating systems and the associated authorisation of work. • Identify the function and use of personal protection equipment and electrical isolation testers. • Familiar with the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Demonstrate the safety awareness of electrified vehicle servicing) • Based on the understanding of electrical fundamentals, the vehicle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations, identify the competency and authorisation requirements for different scopes of service. • Apply the total safety solutions on high-voltage systems to ensure a safe working environment for electrified vehicle servicing. • Correctly choose, check and apply the safety gear and testing equipment for specified electrified vehicle servicing tasks. • Demonstrate the proper emergency response procedures and equipment to be used in the event of injury or electrocution when performing servicing tasks. • Provide an oral report to the abnormalities and decisions made.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of identifying the competency and authorisation requirements for different scopes of services correctly with reference to the understanding of electrical fundamentals, manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of applying the total safety solutions on high-voltage systems in accordance with the electrical fundamentals to provide a safe working environment for electrified vehicle servicing; • Capable of choosing and applying the suitable and effective personal protection equipment and testing equipment correctly for specified electrified vehicle servicing tasks; • Capable of demonstrating the proper emergency response procedures and the rescue equipment to be used in the event of injury or electrocution when performing servicing tasks; and • Capable of providing oral report to the abnormalities and decisions made.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the basic operating principle of electrified vehicles. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair vehicle transmission and under-chassis systems
Code	111691L2
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to check and repair vehicle transmission and under-chassis systems safely according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct basic tests on the systems/components upon completion of work and provide a work report.
Level	2
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operating principles of vehicle transmission and under-chassis systems) • Understand the function and application of service tools and equipment and the disposal procedures of vehicle waste such as used fluids, deteriorated parts, etc. • Understand the structure and basic operating principles of vehicle transmission and under-chassis systems and associated components (mechanical, electrical, hydraulic and pneumatic powered), such as: ◦ Steering systems, including wheel alignment ◦ Suspension systems ◦ Braking systems, including retardation units ◦ Transmission systems (including power take-off unit for commercial vehicles) • Understand the general checking and repairing procedures for the systems/components with reference to the instructions in the vehicle manufacturer's service manual and the requirements on occupational safety and health regulations. • Understand the relevant legal requirements on road and vehicle safety and environmental protection.

	2. Performance (Check and repair vehicle transmission and under-chassis systems)
	• Correctly choose and apply suitable service tools and equipment to perform systems checking and repairing procedures, and properly handle the wastes resulting from the processes.
	• According to the instructions in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely check and repair the transmission and under-chassis systems, including but not limited to:
	  ○ Identify the general problems in vehicle transmission and under-chassis systems by visual inspection, such as the:
	  ▪ steering system, including wheel alignment
	  ▪ suspension system
	  ▪ braking system including retardation units
	  ▪ transmission systems (including power take-off unit for commercial vehicles)
	  ○ Check and repair the failed items to eliminate the typical faulty function of transmission and under-chassis systems, including removal and replacement of components and functional tests of systems.
	• Conduct performance and safety inspections after the work and provide a work report focusing on:
	  ○ Abnormalities
	  ○ Measured data
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking and repairing vehicle transmission and under-chassis systems safely according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of identifying the serviceability of systems and adjusting the system setup to maintain due performance, including but not limited to wheel alignment, spring stiffness, braking efficiency and gear shift point; and • Capable of conducting performance and safety inspections on the systems/components upon completion of work, and providing work report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle mechanical servicing and the use of service tools and equipment. The major legislation/code involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Regulations (This UoC replaced 108649L2, 108650L2 and 108687L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Appreciate the safety precautions in the maintenance work for electric vehicle
Code	111692L2
Range	This unit of competency is applicable in electrified vehicle service workshops. Practitioners should be able to describe the health and safety awareness in relation to electric vehicle operation and the associated servicing activities, with reference to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations.
Level	2
Credit	1 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Health and safety awareness in relation to electric vehicles) • Understand the recognised competency requirements for electric vehicle servicing. • Differentiate the features and operating concepts amongst various types of electric vehicles. • Appreciate the potential risks and hazards associated with the electric vehicle operation and servicing, as well as corresponding safety management. • Understand the definitions of low-voltage and high-voltage electrical operating systems onboard. • Identify the proper maintenance procedures and safety requirements in electric vehicle servicing, as well as the associated safety setup, according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health. • Understand the relevant legal requirements on road and vehicle safety, and environmental protection. 2. Performance (Safety practices of electric vehicle maintenance) • Illustrate the requirements of vocational qualification levels, roles and responsibilities in electric vehicle servicing. • Discern the types of electric vehicles, their features, operating concepts and system voltage levels, as well as related safety awareness. • Identify the potential risks and hazards associated with the electric vehicle operation and servicing, and the actions taken in an emergency. • Determine the necessity of high-voltage system isolation for electric vehicle system maintenance work. • Apply the safety precautions correctly prior to performing general maintenance procedures for the low-voltage operating systems onboard in the workplace with proper tools and equipment, safety setup and signage, according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of depicting the requirements of competency and responsibility for electric vehicle servicing; • Capable of describing the types of electrified vehicles, their features, operating concepts and system voltage levels, as well as related safety awareness;

	• Capable of explicating the potential risks and hazards associated with the electric vehicle operation and servicing, and the necessary actions taken in an emergency; • Capable of differentiating the voltage levels of various operating systems of electric vehicles and identifying the high-voltage system isolation status correctly; and • Capable of applying safety precautions correctly prior to performing general maintenance procedures for the low-voltage operating systems of electric vehicles, such as cooling, steering, braking, suspension, etc., in the workplace with proper tools and safety setup, according to the instructions in the corresponding vehicle manufacturer's service manual, the associated safety guidelines and the requirements of occupational safety and health.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed fundamental understanding of vehicles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Identify the structure and operating principles of the high-voltage systems of electric vehicle and the associated safety awareness
Code	111693L2
Range	This unit of competency is applicable in electrified vehicle service workshops. Practitioners should be able to identify the structure and operating principles of various types of electrified vehicles and associated components, explain their effects on safety and performance, and the associated safety awareness with reference to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The system layouts and operating principles of various electric vehicle systems, and safety awareness) • Differentiate amongst various types of electric vehicles, their layouts, features and operating concepts. • Acquainted with the structure and working principles of the high-voltage operating systems equipped on electric vehicles, the typical locations of their major components, including but not limited to the powertrain and controls, onboard charger (OBC), rechargeable energy storage system (REESS), and heating, ventilation and air conditioning (HVAC) system, as well as their effects on vehicle safety and performance. • Familiar with the potential risks and hazards associated with the operation and maintenance of electric vehicles, including the colour coding and protection of cables and harnesses, the associated safety awareness and preventive measures. • Understand the definitions of low-voltage and high-voltage electrical systems onboard. • Conversant with the functions and applications of special service tools and equipment, personal protection and first-aid equipment for electric vehicle system maintenance. • Identify the general maintenance procedures and criteria of various electric vehicle systems according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health. • Understanding of the relevant legal requirements of road and vehicle safety, and environmental protection.

	2. Performance (Operating principles, safety awareness and maintenance of electric vehicle systems) • Identify the working principles of various electric vehicle types, their layouts, features and operating concepts, as well as related safety awareness. • Explicate the structure and working principles of the high-voltage operating systems onboard, including but not limited to the powertrain, OBC, REESS and HVAC system, as well as their effects on vehicle safety and performance, the colour coding and protection of cables, harnesses and connectors. • Identify the potential risks and hazards associated with the operation and maintenance of electric vehicles. • Correctly differentiate the voltage levels of various electrical operating systems. • Masterly apply effective personal protective and first-aid equipment, with reference to the instructions in the corresponding vehicle manufacturer's service manual and the legal requirements of occupational safety and health, road and vehicle safety, and environmental protection, for electric vehicle system maintenance. • Conduct the general maintenance procedures safely for the electrical operating systems of electric vehicles, including but not limited to, under-chassis systems, powertrain, OBC and HAVAC system, with the application of the correct special service tools and equipment, according to the instructions in the corresponding vehicle manufacturer's service manual and associated safety guidelines.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of identifying various electric vehicle types, their layouts, features, operating concepts and associated safety awareness; • Capable of explicating the structure and working principles of high-voltage operating systems and components of electric vehicles, such as cables and connectors, powertrain, REESS, OBC, HVAC system, etc., and their effects on vehicle safety and performance; • Capable of differentiating the voltage levels of various operating systems to take appropriate protections for the maintenance work; and • Capable of applying correct special service tools and equipment, effective personal protective and first-aid equipment, and specific working criteria to conduct general maintenance procedures safely for the electrical operating systems onboard, such as the under-chassis systems, powertrain, OBC, HAVAC system, etc., according to the instructions in the corresponding vehicle manufacturer's service manual and associated safety guidelines.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of electric vehicles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Identify the structure and operating principles of the high-voltage systems of electric motorcycles and the associated safety awareness
Code	111694L2
Range	This unit of competency is applicable in electric motorcycle service workshops. Practitioners should be able to identify the structure and operating principles of electric motorcycle systems and safety awareness in relation to the operation and associated servicing activities, with reference to the instructions in the corresponding motorcycle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations.
Level	2
Credit	2 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Electric motorcycle technology and associated safety awareness) • Differentiate the features, powertrain basics, operating and system service concepts between internal combustion engine and electric motorcycles. • Conversant with the basic principles of electrical and electronics, including but not limited to electromagnetism, power switching and inversion. • Acquainted with the operating principles and output characteristics of power transmission, modulation and control, electromotive machines and power inverters. • Good understanding of the system layout of a typical electric motorcycle and the locations of major components, including but not limited to the rider safety system, powertrain, rechargeable energy storage system (REESS), onboard charging unit, thermo control, power control and modulation units, their functions and effects on motorcycle performance and safety. • Good understanding of the structure and operating principles of various electric motorcycle systems and associated components, as well as the principles and application of various types of electronic control systems, such as traction motor power control, onboard charging, battery power management, etc. • Familiar with the interpretation of wiring circuit diagrams of various low-voltage and high-voltage electrical systems onboard, and the application of specific cables and wire harnesses, their means of protection and connection. • Appreciate the potential risks and hazards associated with electric motorcycle operation and servicing, as well as corresponding safety awareness of dealing with defective electric motorcycles when live working. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection.

	2. Performance (Operating principles and safety awareness of motorcycle systems) • Explain the basic principles of electrical and electronics, such as electromagnetism, power switching and inversion, etc. adopted for the operation and control of electric motorcycles. • Discern the structure and types of electric motorcycles. • Explain the features, control and operating concepts of various electrical operating systems on electric motorcycles, and correctly interpret the voltage levels and operation of components from the wiring circuit diagrams, such as the powertrain, REESS, braking, cooling and lighting systems, etc., and the safety awareness in operation and service. • Explicate the locations, structure and working principles of the high-voltage operating systems onboard, including but not limited to the powertrain, REESS and associated controls, their effects on performance and operational safety, as well as the colour coding and protection of cables, harnesses and connectors. • Correctly differentiate the voltage levels of various electrical operating systems, including cables. • Identify the potential risks and hazards associated with electric motorcycle operation and servicing, and the actions taken safely in an emergency, including safety awareness of dealing with defective electric motorcycles when live working, according to the instructions in the corresponding motorcycle manufacturer's service manual and the requirements of occupational safety and health and environmental protection.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of explicating the principles of electrical and electronics, such as electromagnetism, power switching and inversion, etc. adopted in the powertrain and energy management systems of electric motorcycles; • Capable of describing the types of electric motorcycles, their features, operating concepts and system voltage levels, as well as related safety awareness in operations and services; • Capable of identifying the voltage levels of various electrical operating systems, including the harnesses and cables, from both the wiring circuit diagrams and real objects; • Capable of explicating the structure and working principles of high-voltage operating systems onboard, including but not limited to the powertrain, onboard charging unit and REESS, as well as associated controls, their effects on performance and operational safety, the colour coding and protection of cables, harnesses and connectors; and • Capable of identifying the potential risks and hazards associated with electric motorcycle operation and servicing, and explaining the safety awareness of dealing with faulty motorcycle systems, including but not limited to cable intact, control functions, REESS, as well as the working environment, in live working condition, according to the instructions in the corresponding motorcycle manufacturer's service manual and the requirements of occupational safety and health and environmental protection.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed a good understanding of motorcycles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Vehicle safety inspection for regulatory compliance
Code	111695L2
Range	This unit of competency is applicable in vehicle service workshops or vehicle inspection places. Practitioners should be able to inspect vehicles and identify defects which do not comply with regulations according to the relevant legislative provisions under the Road Traffic Ordinance of Hong Kong or the instructions in the vehicle manufacturer's servicing manual, and provide written report after the work.
Level	2
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Defects on the vehicle that do not comply with regulations) • Master the legislation and regulatory provisions under the Road Traffic Ordinance of Hong Kong in relation to vehicle inspection. • Master the legislation and regulatory provisions under the Road Traffic Ordinance, the associated guidelines and statutory requirements in relation to the procedure of vehicle inspection. • Understand the instructions in the vehicle manufacturer's service manual in relation to the procedure of vehicle system inspection. 2. Performance (Inspect vehicle for regulatory compliance) • According to the legislation and regulatory provisions under the Road Traffic Ordinance and the associated guidelines in relation to vehicle inspection, the instructions in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely inspect the vehicle and identify defects that do not comply with regulations, such as defects in: ◦ Engine and mechanical components, including fuel system and exhaust emission control ◦ Under-chassis systems including steering, brakes and suspension ◦ Wheel and tyre ◦ Transmission systems ◦ Electrical systems such as lighting, warning and wiper ◦ Chassis and body, including windscreen, window glass, in-cab fittings, interior driving controls and restraint system ◦ External energy charging inlet, high-voltage cables and associated components (for electrified vehicles) ◦ Fuel cell unit and associated components (for fuel cell electric vehicles) ◦ Pressure vessel and associated hose/pipe of fuel, including but not limited to hydrogen and liquefied petroleum gas (not applicable to motorcycles) ◦ Other related systems/components • Provide written report with measuring data support upon the completion of examination.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of inspecting vehicles and identifying defects which do not comply with regulations by visual inspection and the measuring result of designated testing equipment and instruments; and • Capable of providing a written vehicle examination report according to the legislative provisions under the Road Traffic Ordinance or the instructions in the vehicle manufacturer's service manual.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed comprehensive knowledge of vehicle servicing and inspection. (This UoC replaced 108671L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Assemble heat, ventilation and air-conditioning (HVAC) systems on vehicles
Code	111696L2
Range	This unit of competency is applicable in vehicle body building workshops. Practitioners should be able to carry out the assembling procedures for heat, ventilation and air-conditioning (HVAC) systems in accordance with working instructions and working drawings as well as the actual worksite conditions, and provide work report after the work.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operating principles of HVAC systems on vehicles) • Understand the characteristics of refrigerants, relevant handling procedures and legal requirements. • Identify the structure and operating principles of HVAC systems on vehicles. • Master the installation and inspection procedures for the HVAC systems on vehicles according to the manufacturer's instructions. • Understanding of the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Assembling procedure for the HVAC systems on vehicles and functional test) • Safely and correctly assemble the HVAC systems on vehicles according to relevant legislative provisions, instructions in the manufacturer's assembling manual and the requirements of occupational safety and health as well as that of environmental protection, including: ◦ Assemble HVAC systems on vehicles ◦ Carry out the assembling procedure according to the respective rules of the workshops and instructions ◦ Use prescribed tools and instruments to charge the exact type and adequate quantity of refrigerant and lubricant into the air-conditioning system correctly to ensure normal system pressure and without leaking, and conduct a leakage test ◦ Connect relevant wiring for operational control units and fan motors, install the thermal insulation materials and associated ductwork. • Capable of inspecting and testing the system upon completion of work to ensure that the requirements of the manufacturing specification are met, and providing work report.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of assembling HVAC systems on vehicles with correct tools and materials according to the instructions in the manufacturer's assembly manual; • Capable of charging the exact type and adequate quantity of refrigerant and lubricant into the air-conditioning systems and conducting leakage tests; and

	• Capable of inspecting and evaluating the system performance, and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of vehicle electrical system repair and refrigerant handling, and the operating principles of electrified vehicles. In the case of working on electrified vehicles, the practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The assembly process should be under the high-voltage system power-down condition and is confirmed by the checking result of special service tools / authorised competent person. (This UoC replaced 108762L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Recognise the evolution of automotive technology and design
Code	111697L2
Range	This unit of competency is applicable to individuals who are new to the automotive industry, such as entry-level technicians, sales trainees, is able to identify key technological milestones and major shifts in automotive design language.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge • Understand the chronological order of major automotive development periods. • Identify key features of vehicles from different periods. • Understand the names and key characteristics of pioneering automotive manufacturers and their models. • Understand the basic functions and evolution of major vehicle systems. • Recognize factors influencing automotive design (e.g., safety regulations, environmental issues, energy efficiency). 2. Performance • Describe the major periods in automotive history and explain the key characteristics of each period. • Visually distinguish the exterior and interior designs of vehicles from the 1950s, 1980s, and early 21st century, highlighting key differences in styling elements. • List the most important technological advancements in the following vehicle systems: engine, transmission, braking system, safety system, or in-vehicle entertainment system. • Explain in simple terms how factors such as "increased safety standards" changed the appearance of cars (e.g., stronger pillars, bumpers, airbags). • List major pioneering automotive manufacturers and their historically significant models (e.g., Ford Model T, Volkswagen Beetle, Mini).
Assessment Criteria	The practitioners should demonstrate the following abilities: • From real-life images of vehicles, is able to recognize and distinguish automotive design features to identify their approximate era. and create simple timelines or posters demonstrating the evolution of specific vehicle models or functions. • Able to explain the reasons for changes in automobiles over time and the basic functions of various automotive systems. • Aable to correctly identify, describe, and distinguish key features and eras of automobiles.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle construction and the powertrain operation.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Introduce the characteristics of different types of vehicles and their accessories, and the product transaction information
Code	111776L2
Range	This unit competency is applicable to comprehensively introduce the characteristics, features, and benefits of different vehicle types (including passenger cars, SUVs, light commercial vehicles, and New Energy Vehicles) and their associated accessories to customers.
Level	2
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of Different Types of Vehicles and Their Accessories) • Understand Source and interpret information on vehicle types and accessories. ◦ Able to identify key characteristics of different vehicle types, including passenger vehicles, Sports Utility Vehicles (SUVs), Light Commercial Vehicles (LCVs), and people-movers. ◦ Able to differentiate between vehicle powertrains, including Internal Combustion Engine (ICE), Hybrid Electric Vehicle (HEV), Plug-in Hybrid Electric Vehicle (PHEV), and Battery Electric Vehicle (BEV). ◦ Able to classify and recognize various original and aftermarket parts, accessories, including their purpose, function, and benefits. • Identify customer needs and usage patterns. ◦ Able to use questioning and active listening techniques to establish customer lifestyle, vehicle usage requirements, budget, and key priorities (e.g., fuel economy, space, performance, safety, technology). ◦ Able to identify potential needs that the customer may not have explicitly stated. ◦ Able to determine the suitability of customer's existing vehicle knowledge and tailor explanations accordingly.

	2. Performance (Presentation and Demonstration different types of products)
	• Match vehicle and accessory characteristics to customer needs.
	  ◦ Able to compare and contrast different vehicle types and powertrains based on identified customer needs, highlighting advantages and limitations of each.
	  ◦ Able to recommend vehicle accessories that enhance safety, convenience, practicality, or aesthetics aligned with the customer's profile.
	  ◦ Able to explain how specific vehicle features and accessories provide solutions to customer requirements.
	• Present vehicle and accessory information to customers.
	  ◦ Able to provide clear, accurate, and objective information on vehicle and accessory characteristics, using appropriate technical terminology in a customer-friendly manner.
	  ◦ Able to demonstrate key vehicle features and accessory operation where possible.
	  ◦ Able to explain the financial implications of accessory fitment, including cost, potential impact on vehicle warranty, and effect on resale value.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove the ability of: Capable to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria, and foundation skills. • Understand the key characteristics, typical uses, advantages, and disadvantages of: Hatchbacks, Sedans, Wagons, SUVs, Light Commercial Vehicles (Utes, Vans), and People-Movers. • Understand the basic operational differences and key benefits/limitations of: Petrol/Diesel/Alternative Fuel (e.g. Hydrogen/ Methanol), ICE, HEV, PHEV, and BEV. • Understand key terminology: fuel consumption (L/100km), electric range (km), towing capacity (kg), payload (kg). • Understand the key specifications: engine size, power/torque, transmission types, drivetrain (FWD, RWD, AWD), safety ratings (ANCAP), and interior dimensions. • Understand the common categories of accessories: protection, practicality, technology (infotainment, dash cams), comfort, and appearance. • Understand the difference between genuine (OEM) and aftermarket accessories, including potential implications for vehicle warranty. • Able to identify the explicit and implicit customer needs and matching product features to those needs.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed basic knowledge on sales and marketing (This UoC replaced 108572L1)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Apply financial accounting techniques
Code	108557L3
Range	This unit of competency is applicable in workplaces relevant to the operational management of the automotive industry. Practitioners should be able to employ financial accounting theory as well as performing such duty independently and effectively for the industry according to the requirements.
Level	3
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Financial accounting theory for the automotive industry) • Good understanding of the functions of financial accounting theory. • Good understanding of the principles and procedure of financial accounting theory. • Good understanding of the life cycle of automotive products. • Good understanding of the inventory management of automotive products. • Good understanding of the effect of exchange rates on the finance of the automotive industry. • Good understanding of the relevant legal requirements of government policy on the automotive industry. 2. Performance (Adopt financial accounting techniques for the automotive industry) • Adopt financial accounting principles to perform relevant duty for the automotive industry, including compilation of: ◦ ledger by account ◦ profit and loss statements ◦ balance sheet ◦ cash flow statements • Adopt accounting ratios. • Adopt accounting concepts. • Adopt the management functions of accounting systems. • Estimate the time value of currencies. • Estimate the change in exchange rates on the effect of finance account. • Estimate the inventory and value of stock.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of employing financial accounting theory for the automotive industry; and • Capable of independently and effectively performing respective financial accounting duty according to legal and requirements.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Adopt cost accounting techniques
Code	108558L3
Range	This unit of competency is applicable in workplaces relevant to the operational management of the automotive industry. Practitioners should be able to employ cost accounting theory to perform such duty independently and effectively for the industry according to the requirements.
Level	3
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Cost accounting theory)
	• Master basic cost accounting theory, including:
	  ○ The significance and functions of cost accounting
	  ○ The relationship between cost accounting, management accounting and financial accounting
	  ○ The cost management system
	• Good understanding of the classification of costs, including:
	  ○ The basic concept of costs
	  ○ The classification of costs
	  ○ The characteristics and differences of different industries
	  ○ The compilation of profit and loss statements
	• Good understanding of the cost of quality, including:
	  ○ The significance of quality
	  ○ The importance of cost of quality
	• Good understanding of total cost method and variable cost method.
	2. Performance (Adopt industry-related cost accounting techniques)
	• Calculate cost, including:
	  ○ Wages and cost of goods sold, etc.
	  ○ Cost estimation
	  ○ Regression analysis
	  ○ Cost allocations
	• Analyse cost, quantity and profits, including:
	  ○ Break-even analysis
	  ○ Calculate break-even point
	  ○ Analyse cost, quantity and profits
	• Calculate total cost and variable cost, including:
	  ○ Formulate profit and loss statements by total cost method and variable cost method.
	  ○ Assess the impact of changes in inventory level on profit and loss.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of adopting basic cost accounting theory; and • Capable of performing cost accounting duty independently and effectively for the automotive industry according to the legal requirements.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Implement sales plan for vehicle products
Code	108579L3
Range	This unit of competency is applicable in vehicle sales or related workplaces. The sales person should be able to employ sales techniques to implement sales plan effectively to accomplish the sales targets.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Sales of vehicle products) • Good understanding of the sales outlets and procedure for vehicle products. • Good understanding of the vehicle market and customers' preferences. • Good understanding of the strengths and weaknesses of the product. • Good understanding of the market positioning of the brand/product. • Good understanding of other competitors in the same business and their sales methods. • Understand the concept of foreign exchange risk. • Know the Government's environmental laws and regulations on vehicle. products, such as concessionary tax policy on environment-friendly cars. • Know the market information system for vehicle products . 2. Performance (Implement sales plan for vehicle products) • Arrange the sales area and sales teams for vehicle products according to the marketing plan. • Arrange sales activities jointly with marketing and promotion department. • Negotiate with service and parts departments to provide corresponding 3S (Sales, Service and Spare Parts) support. • Train front-line teams to apply vehicle product selling techniques, such as: negotiating skills, identify target customers and promotional techniques. • Employ information technology and internet for sales of vehicle products. • Assess the performance of the sales plan. • Review the implementation process of the sales plan. • Compile and submit sales reports to supervisor.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of employing sales techniques; and • Capable of implementing sales plan effectively to accomplish the sales targets; and capable of communicating effectively with relevant departments.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle products and sales.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Arrange financial loan for vehicles
Code	108580L3
Range	This unit of competency is applicable in vehicle showrooms or exhibition venues. Practitioners should be able to explain the general procedure for arranging financial loan to customers according to guidelines.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Financial loan)
	• Good understanding of the financial loan for general private vehicles and commercial vehicles, including:
	  ○ Terms of loan, such as customers' responsibilities to the financial company, the amount of loan, years of payment, interests, insurance requirements, damages or loss of vehicles, advance redemption and discontinuance of payment, etc.
	  ○ Relevant documents required, such as contract of loan, customers' identity cards, proof of address, vehicle registration documents, insurance policy and examine the authorisation document from positive credits data bank, etc.
	  ○ The procedure of loan, such as transferring customer information including identity card, proof of address, vehicle registration documents to the financial company
	  ○ The method of calculating interest rates of loan, such as payment by instalments, floating interests and fixed interests, etc.
	• Good understanding of the Personal Data (Privacy) Ordinance to maintain the secrecy of customers' information.
	• Good understanding of the regulations on the acceptance of commission.
	• Good understanding of the relationship between the organization and the financial company in corporation as well as the restrictions on adopting third party financial company.
	2. Performance (Arrange financial loan for vehicles)
	• Be familiar with the financial arrangement and characteristics of general private vehicles and commercial vehicles; and offer suitable financial arrangement to customers according to their needs.
	• Offer financial loan options to customers for reference, including the calculation of interest rates, years of payment, the amount of first instalment and monthly payment.
	• Act as intermediary to arrange financial loan and assist customers to provide the documents required for approval, such as proof of address, vehicle registration documents and insurance policy, etc., so as to complete the loaning procedure and handle relevant financial loan documents.
	• Safeguard customers' privacy.
	• Comply with the regulations on acceptance of commission.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of understanding the requirements of financial arrangement and characteristics of general private vehicles and commercial vehicles; respond to customers' loaning requests and offer financial suggestions on vehicles; • Capable of calculating years of payment, the amount of first instalment and monthly instalment; and • Capable of acting as intermediary to arrange financial loan and handle relevant documents to facilitate transactions.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Arrange for vehicle insurance
Code	108581L3
Range	This unit of competency is applicable in vehicle showrooms or exhibition venues. Practitioners should be able to explain the terms of insurance policy to customers appropriately and arrange for vehicle insurance according to the instruction.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Vehicles Insurance)
	• Good understanding of general vehicle insurance, including:
	  ○ The summary of vehicle insurance ordinances
	  ○ The terms and conditions of vehicle insurance
	  ○ The types of vehicle insurance, such as Third-Party Liability Insurance, Comprehensive Insurance and Policy Excess
	  ○ The document and timeframe required for processing vehicle insurance
	  ○ The procedure for handling traffic accidents, including:
	  ▪ Accidents involving injury and death
	  ▪ Accidents not involving injury and death
	  ▪ Understand the scope of acceptance of commission
	  ▪ The section concerning vehicle insurance under The Hong Kong Federation of Insurers (HKFI)
	2. Performance (Arrange for vehicle insurance)
	• Good understanding of the relationship between the organisation and the cooperating insurance company as well as the restrictions on adopting third party insurance company.
	• Explain clearly to customers general insurance issues and capable of providing insurance suggestions.
	• Explain to customers the general procedure for handling the submission and claims of compensation for traffic accidents.
	• Act as intermediary to arrange for vehicle insurance and assist customers complete the formalities for insurance application.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the types of vehicle insurance and the terms and conditions of the policy; and • Capable of explaining clearly to customers general insurance issues, arrange insurance application with insurance company for customers as well as submit and claim compensation when necessary.

Remark	Practitioners should obtain the Insurance Intermediary License issued by The Hong Kong Federation of Insurers.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Arrange receipt and delivery procedures of imported new vehicles
Code	108582L3
Range	This unit of competency is applicable in vehicle sales/service centers. Practitioners should be able to arrange vehicles to be transported to Hong Kong from the places of origin after purchasing orders have been placed under different situations/circumstances according to the procedure. They should also arrange delivery and inspection of vehicles; vehicle registration and licensing; and installation of accessories and supplementary devices.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Procedure for handling new vehicles) • Good understanding of the delivery of vehicles, transportation requirements, the processing procedure required and the workflow upon arrival of vehicles in Hong Kong. • Good understanding of relevant local statutory requirements and procedures of registration of imported vehicles and the procedure for application of licence. • Good understanding of the accessories and supplementary devices required and get familiar with vehicles and other product/service suppliers for the provision of products/services required. 2. Performance (Implement procedure for receipt and delivery new vehicles) • Arrange the procedure for delivery, transportation and storage, etc. upon arrival of vehicles in Hong Kong. • Arrange the transportation of vehicles, processing procedure and coordinate the workflow involving different parties. • Make suitable arrangement for registration of imported vehicles and application for licence according to the procedure stipulated in relevant local legislative provisions. • Arrange the procedure for vehicle inspection and prepare the legal documents required. • Maintain contact with the sales department to understand customers' needs and demands; and get to know the relevant arrangement and agreement established between customers and salespersons. • Arrange and prepare the accessories and supplementary devices required, or the contact list of vehicles or other product/service suppliers for the provision of products/services required.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of arranging delivery, transportation and storage upon arrival of vehicles in Hong Kong under different situations/circumstances according to procedure; • Capable of arranging vehicle inspection and application for license according to the requirements of relevant local statutory requirement; and • Capable of arranging and coordinating the required processing procedure upon arrival of new vehicles in Hong Kong and arranging the installation of accessories and supplementary devices.

Remark	The credits value of this unit of competency is set on the presumption that the assessee concerned has already possessed basic knowledge of vehicle servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Implement market research plan
Code	108590L3
Range	This unit of competency is applicable in workplaces relevant to the market research of vehicle products (such as auto parts and repairing services). Practitioners should be able to collect market research information on vehicle products. They should also be able to employ market research techniques effectively to implement market research plan according to the requirements to accomplish its market research targets.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Market research techniques for vehicle products)
	• Good understanding of the objectives of market research for vehicle products, such as:
	  ○ Understand the pros and cons of current brands or products
	  ○ Recognise the position of one's own brands or products graded by customers
	• Good understanding of the marketing methods that can tie in with the sales of vehicle products.
	• Good understanding of the market research methods for vehicle products.
	• Good understanding of the market information system for vehicle products.
	2. Performance (Implement market research plan)
	• Effectively implement market research plan according to organisational targets, including:
	  ○ Identify the targets for market research
	  ○ Understand the market positioning of brands
	• Carry out market research duty as well as communicate and coordinate with other departments.
	• Apply market research methods, such as:
	  ○ Questionnaire
	  ○ Interview
	• Make use of information technology and the internet to collect market research information on vehicle products.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of collecting market research information on vehicle products from the public and internal staff according to requirements; and • Capable of employing market research techniques effectively to implement market research plan for vehicle products to accomplish the company's market research targets and report to supervisor.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Implement marketing plans
Code	108591L3
Range	This unit of competency in applicable in workplaces relevant to the marketing of vehicle products (e.g. auto parts or servicing services). Practitioners should be able to understand the market trend of vehicle products so as to effectively implement marketing plans.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (The market trend and market theory of vehicle products)
	• Good understanding of the market of vehicle products:
	  ○ The opportunities and threats brought to the organisation by macroscopic marketing and microscopic environment
	  ○ The concept of market segmentation
	  ▪ Understand the purpose of market segmentation and "position" the products
	  ▪ Understand the basic variables of the market
	  ▪ Understand market segmentation procedure and its basic strategies.
	  ○ Understand customers' buying pattern, types of customers and how they make decisions
	  ○ Master the techniques of handling product in-take
	• Good understanding of the trend of vehicle products and services as well as information on technical development:
	  ○ Analyse vehicle products and services, such as: core products/services, basic products/services, extra products/services, etc.
	  ○ The development trend of vehicle products and services
	  ○ The development trend of vehicle servicing techniques
	• Good understanding of the impact of government policies and local economics on the vehicle market.
	• Good understanding of market orientation theory, including:
	  ○ The operation of marketing portfolio
	  ○ Consumer goods and industrial and commercial markets
	  ○ Customer-led and vehicle product-led organisations
	• Good understanding of marketing environment and market segmentation, including:
	  ○ The distribution channels of vehicle products, including promotion methods
	  ○ Sales and pricing strategies and methods
	2. Performance (Implement marketing plans for vehicles)
	• Employ marketing knowledge to perform the duties of promoting vehicle products and services to accomplish organisational targets.
	• Analyse the market and the characteristics of target customers.
	• Coordinate practical marketing work according to the established marketing plans of the organisation, including identify promotion and publicity objectives and design relevant promotion proposals.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioners being assessed shall prove that he/she is: • Capable of possessing marketing knowledge on general vehicle products and services and capable of understanding the marketing environment of vehicles and market segmentation; and • Capable of performing marketing duties of vehicle products and servicing services to accomplish the promotion objectives; and coordinate practical promotion work according to the established marketing plans, including identify promotion and publicity objectives and draw up relevant promotion proposals.
Remark	The credits value of this unit of competency is set on the presumption that the assessee concerned has already possessed marketing and promotion techniques of vehicle products.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Implement inventory control of vehicle parts
Code	108605L3
Range	This unit of competency is applicable in vehicle parts store. Practitioners should be able to control of stock of vehicle parts including analysing stock records to identify parts to be purchased, buying at the most advantageous terms, following up orders, monitoring the performance of suppliers and maintaining accurate purchasing records, as well as identifying when to carry out stock cleansing procedures.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Stock control with in vehicle parts operation) • Good understanding of the stock records to identify parts. • Good understanding of the business terms for the maximum advantage for purchasing. • Good understanding of the system to follow for placing and follow up orders. • Good understanding of the procedure to complete the purchasing records. • Good understanding of the stock cleansing procedures. 2. Performance (Analyzing stock records, monitoring purchasing records and identifying stock cleaning procedure) • Fill in parts stock records. • Analysis of parts stock records. • Monitoring the performance of suppliers and maintaining accurate purchasing records. • Carry out stock cleaning procedures.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of analysing stock records to identify parts to be Purchased; • Capable of monitoring supplier's performance and maintaining accurate purchasing records; and • Capable of identifying stock cleaning procedures.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Return procedure of purchase
Code	108606L3
Range	This unit of competency is applicable to the practitioners of vehicle sales, parts and accessories, inventory control and management departments for effective handling the demands for goods return based on the established procedure of organisation, so as to safeguard the interests of the organisation and customers.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The principles of the return of vehicle parts and accessories) • Good understanding of the use and characteristics of vehicle parts and accessories. • Master organisational principles on the return of purchase. • Good understanding of organisational procedure for receipt, dispatch and handling of returned purchase. • Good understanding of organisational monitoring on returned purchase and respective documentary system. 2. Performance (Handle the return of purchase) • Handle the return of purchase according to the organisation's established rules, such as: Product specification ◦ The standards of handling and using of the products set by the manufacturer or supplier e.g. approved installation procedure, warranty or storage period ◦ Be familiar with the validity of transaction documents ◦ Identify the products • Execute protective measures on the returned purchase according to established handling procedure, such as packaging, arrangement for delivery and storage. • Keep monitoring record on returned purchase. • Execute the procedure for refunding or new product replacement to customers and handling of relevant documents. • Compile report on preliminary inspection of returned purchase and the frequency record of similar defects for facilitating follow up action taken by parts management departments. • Carry out the contingency measures established by the organisation, for special cases such as handling of customers' dissatisfaction, occasional bulk return of purchase and insufficient inventory level. • Reflect procedural deficiency to the supervisor or respective counterpart in note form.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of ascertaining the validity of the demands for return of purchase according to the organisation's established principles;

	• Capable of carrying out contingency procedure according to the guidelines established by the organisation; • Capable of reporting on preliminary inspection of returned purchase and on the frequency record of similar defects for facilitating follow up action taken by parts management departments; and • Capable of handling the returned purchase according to established procedure and reflect procedural deficiency.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner has already possessed the capability to identify auto parts and accessories.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Order parts and accessories
Code	108607L3
Range	This unit of competency is applicable to the practitioners of parts and accessories sales department for customer order according to procedure established by the organisation, so as to enhance its selling efficiency.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The function of auto parts and accessories, its coding method and sales) • Master the latest information on the prices of different parts and accessories. • Good understanding of the standard and selling regulations of respective products. • Know the types, functions, locations and names of vehicle parts and accessories. • Good understanding of the coding method used by vehicle manufacturer or parts supplier for vehicle parts and accessories. • Good understanding of the selling (including ordering) methods and procedure employed by the organisation, such as order form, invoice, deposit treatment and transportation time. • Be familiar with the use of documentary system for sales (including ordering) employed by the organisation (including the Enterprise Resource Planning (ERP) or related software). 2. Performance (Implement the order procedure for parts and accessories) • According to the information of customer demand, ensure that if there is sufficient inventory, or a requirement for placing order. • Confirm the ordered goods and record customer information, such as the code, quantity, price and deposit of parts and accessories, as well as modes of transportation and ways to contact customers. • Complete relevant ordering documents, such as ordering record, order form, invoice and receipt of deposit. • Confirm the supply with vehicle manufacturer or parts supplier according to the information of goods ordered, and complete the ordering procedure. • Select modes of transportation according to the degrees of urgency of the orders and the guidelines established by the organisation. • Regularly record the delivery progress of ordered goods to facilitate follow-up actions. • Carry out the contingency measures established by the organisation, for special cases such as out of stock, delay in delivery and cancellation of orders.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of confirming the parts and accessories ordered by customers accurately and speedily according to the provided information; • Capable of ordering parts and accessories and complete the ordering document according to organisational procedure; and capable of following the progress of delivery;

	• Capable of carrying out contingency procedure according to the guidelines established by the organisation; and • Capable of reviewing the effectiveness of the ordering procedure for parts and accessories, and reflecting any deficiency to supervisor or respective counterpart, so as to improve the efficiency of parts and accessories ordering.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner has already possessed the capability to identify / confirm auto parts and accessories.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Store auto parts and accessories
Code	108611L3
Range	This unit of competency is applicable to the practitioners of the warehouse of auto parts and accessories, inventory control and management department as well as the sales department for effective protection and storage of goods according to the established guidelines of the organisation.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Auto parts and accessories, and the characteristic of transportation devices) • Good understanding of the characteristics of auto parts and accessories. • Master the methods to store and protect auto parts and accessories • Identify the applicability of different transportation devices. • Identify the applicability of different protective materials. • Good understanding of the organisation's labelling system for auto parts and accessories. • Good understanding of the basic knowledge in occupational safety, health, environmental protection and handling of dangerous goods/chemicals. 2. Performance (Store auto parts and accessories) • Categorize, protect and store the goods effectively according to the organisation's guidelines on storage of goods, such as: ◦ Verify the categories of goods (general or dangerous goods) ◦ Carry out the protection of goods and packaging specification (e.g. protective materials and the environmental requirements for storage of goods) ◦ Fulfil the security and environmental requirements for the storage of precious properties (e.g. auto and electronic parts) ◦ Verify the quantity of goods and storage areas (including differentiate them from existing inventory) ◦ Report on damages of stored goods • Execute the labelling procedure for the location of stored vehicles, auto parts and accessories. • Carry out the contingency measures established by the organisation, for special cases (e.g. incorrect bar code or quantity of goods; insufficient storage areas) • Reflect procedural deficiency to the supervisor or respective counterpart in note form.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of enabling effective protection and appropriate storage location for auto parts and accessories according to the guidelines on storage of goods established by the organisation; • Capable of carrying out contingency procedure according to the established guidelines of the organisation; and

	• Capable of reflecting procedural deficiency regarding the storage of auto parts and accessories to the supervisor or the respective counterpart, so as to enhance the efficiency of protection and storage of goods.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner has already possessed the capability to identify auto parts and accessories.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Condemn the inventorial stock
Code	108612L3
Range	This unit of competency is applicable to the practitioners of inventory control and management department for the condemnation of inventorial stock according to the established procedure of organisation, so as to enhance its effectiveness in the utilisation of resources.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The condemnation procedure for inventorial stock) • Good understanding of the characteristics of inventory stock, such as sales record and the time limit for storage. • Good understanding of the validity of inventory stock, such as damages. • Master the decay time line of different types of vehicles. • Good understanding of the terms offered by different waste recovery traders • Master the established inventorial stock condemnation procedure of the organisation. 2. Performance (Handle the condemnation of inventorial stock) • Handle the condemnation of inventorial stock according to the procedure established by the organisation: ◦ Confirm the items and quantities of the inventorial stock to be condemned according to their characteristics, validity, selling opportunities and salvage value ◦ Make suggestions to staff in designated ranks on the condemnation of inventorial stock ◦ Arrange and monitor the destruction process upon approval of condemnation suggestions ◦ Complete relevant record documents • Select and monitor the waste recovery trader according to the procedure established by the organisation, such as: ◦ Selling price ◦ The recovery cycle of waste and the minimum quantity required ◦ Carry out contingency measures for special cases such as accumulation of condemned stock and unreasonable condemnation • Review and report on the effectiveness of the procedure for condemnation of inventorial stock, and execute improvement measures approved by seniors.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of making accurate condemnation suggestions according to the principle on the condemnation of inventorial stock established by the organisation; • Capable of effectively handling the condemnation of inventorial stock and completing relevant document according to established procedure; and

	• Capable of confirming and monitoring the waste recovery trader according to the established procedure of the organisation.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner has already possessed the capability to identify auto parts and accessories.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Carry out purchasing procedures for auto parts and accessories (for designated motor agents)
Code	108620L3
Range	This unit of competency is applicable to the practitioners of parts and accessories purchasing department of designated motor agents for the purchasing of suitable goods in appropriate quantity according to the purchasing procedure formulated by the organisation, so as to tie in with its operational strategy of organisation.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories, and the market situation) • Master the latest information on the price and market demand of different parts and accessories. • Good understanding of the standard of goods, and the laws and regulations on the selling of goods. • Master the specifications and required inventory levels for different parts and accessories. • Master the handling of purchasing document of the organisation. • Master the new trend and specifications of relevant environmental-friendly products, and offer choices to customers. • Master the concept and application of green purchase. 2. Performance (Purchase auto parts and accessories) • Purchase auto parts and accessories from designated supplier according to the purchasing strategy formulated by the organisation, including identify the purchasing quantity and cycle of different parts and accessories. • Complete documents in relation to transaction record, customs clearance. • In accordance with organisational guidelines, the consuming pattern of local market and the trends of different places, execute the purchasing of OEM accessories or related products (e.g. souvenir). • Carry out the established contingency measures for special cases (e.g. fluctuating exchange rate and delay in delivery). • Review the quality of auto parts and accessories and reflect procedural deficiency in purchasing to seniors or respective counterparts in note form.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of determining the purchasing quantity and cycle of auto parts and accessories according to the purchasing procedure formulated by the organisation, and effectively carry out the purchasing procedure; • Capable of purchasing OEM accessories and related products according to the consuming pattern of local market and the trends of different places; • Capable of carrying out the contingency measures according to the established guidelines of organisation; and

	• Capable of reflecting the quality of auto parts and accessories to respective counterparts.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of auto parts and accessories and merchandizing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Carry out the purchasing procedure for auto parts and accessories (for non-designated vehicle agents)
Code	108621L3
Range	This unit of competency is applicable to the practitioners of parts and accessories purchasing department of non-designated vehicle agents for the purchasing of suitable goods in appropriate quantity from selected supplier according to the purchasing procedure formulated by the organisation, so as to tie in with operational needs.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories, and the market situation) • Master the latest information on the price, market demand and market share of different parts and accessories. • Good understanding of the standard of goods, the laws and regulations on the selling of goods • Master the specifications and required inventory levels for different parts and accessories. • Master the handling of purchasing document of the organisation. • Good understanding of the procedure for selecting suppliers of parts and accessories. • Good understanding of the methods to assess the applicability of non-OEM parts and accessories. • Master the new trend and specification of relevant environmental-friendly products and offer choices to customers. • Master the concept and application of green purchase. 2. Performance (Purchase auto parts and accessories) • Determine the purchase of parts and accessories required according to the established methods of the organisation in the assessment of the applicability of non-OEM parts and accessories. • Identify the grading of the suppliers for the required parts and accessories according to the established procedure of organisation in supplier selection. • Purchase from selected suppliers according to organisational strategy, including identify the specification of different parts and accessories; the quantity, price and cycle of purchase; and the requirements of suppliers. • Complete documents in relation to transaction record, customs clearance. • In accordance with organisational guidelines, the consuming pattern of local market and the trends of different places, execute the purchasing of OEM or non-OEM accessories or related products (e.g. souvenir). • Carry out contingency measures for special cases (e.g. non-conformity quality and fluctuating exchange rate). • Reflect procedural deficiency in purchasing to seniors or respective counterparts in note form.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of determining the grading of suitable parts and accessories suppliers according to the organisation's procedure of selecting suppliers; • Capable of purchasing auto parts and accessories from suitable suppliers effectively according to the purchasing procedure formulated by the organisation; • Capable of carrying out contingency measures according to the established guidelines of organisation; and • Capable of reviewing the purchasing procedure for auto parts and accessories and reflecting deficiency to respective counterparts.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned already possess the knowledge of auto parts and accessories and merchandizing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Manage warehouse facilities
Code	108628L3
Range	This unit of competency is applicable to the practitioners in the vehicle, parts and accessories warehouses for effective management of their facilities, so as keeping them in good condition according to the established warehouse management policy of organisation.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Various kinds of warehouse facilities) • Good understanding of the various kinds of warehouse facilities in their structures, methods of use and protection, and potential dangers. • Master the basic knowledge of relevant laws and regulations, such as occupational safety and health, environmental protection, building structure and facilities. 2. Performance (Manage warehouse facilities) • Effectively monitor and manage the operation of various kinds of facilities according to the established warehouse management policy of the organisation, including: ◦ The load capacity of the facilities ◦ The control of temperature, humidity, ventilation and illumination, etc. ◦ Security systems ◦ Fire prevention systems ◦ Electric supply systems ◦ Water supply and sewage systems ◦ The storage of dangerous goods/chemicals ◦ Building structure • Conduct regular inspection to the aforesaid facilities and perform maintenance procedures. • Record and assess the maintenance condition of various facilities and submit reports periodically. • Carry out contingency measures for special cases (e.g. power failure and water leakage.) • According to the condition of various facilities, suggest maintenance plan to seniors in note form.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of effectively managing and protecting warehouse facilities according to the established warehouse management policy of the organisation; • Capable of finishing the records of maintenance and condition assessment of warehouse facilities accurately and completely, and proposing the maintenance plan for facilities concerned; and • Capable of carrying out appropriate contingency measures according to the designated instructions.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of building services maintenance.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Fulfil the requirements on environmental protection (parts management)
Code	108629L3
Range	This unit of competency is applicable to workshops, warehouses and retail shops of new and used parts in the automotive industry. Practitioners should be able to understand environmental protection concept and comply with relevant requirements in a familiar workplace.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Environmental protection concept) • Good understanding of the statutory requirements of environmental protection ordinances applicable to the department which one belongs to. • Good understanding of organisational instructions on the requirements of environmental protection. 2. Performance (Comply with requirements on environmental protection) • In accordance with the organisational guideline, carefully carry out the procedures that bear a risk of polluting the environment in a familiar working environment such as: ◦ Prevent leakage of engine oil, fuel, gearbox oil, organic dissolvent, paint, engine coolant and various kinds of hydraulic oil into the land and prevent discharge of these pollutants into sewers, rivers, streams or sea. Relevant works should be carried out on the floor coated with leak-proofing material or covered with leak-proofing canvas. All procedures should be handled according to the Code of Practice for Chemical Waste Producers ◦ Prevent disposing empty utensils containing organic substances (e.g. abandoned oil container, abandoned oil filter and washing cloth, etc.) together with general waste ◦ Collect all refrigerants by approved refrigerant recycling equipment before opening up of the refrigerant lines ◦ Works that produces noise, such as metal cutting or the use of pneumatic tools, should be carried out in indoor workshops within specified timeframe to avoid noise nuisances ◦ Capable of sorting different waste materials, such as tyres, batteries, various kinds of metal and plastics, etc.; and able to refer to relevant international standard and instructions ◦ Minimize the waste production in parts packaging by reduction in utilisation of excessive packaging materials ◦ Works involving dangerous chemicals and pollutants should be carried out according to procedures ◦ Dispose waste of non-vehicle parts in accordance with established procedures • Be familiar with the organisation’s contingency measures on pollutant leakage; capable of handling the situation safely and efficiently so as to minimize danger and pollution. • Confirm the compliance with the statutory requirements on handling chemical wastes and utilisation of refrigerants.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of fully understanding environmental protection ordinances and organisational requirements on environmental protection; and carrying out the work carefully to protect environment; and • Capable of carrying out the works involving dangerous chemicals, pollutants, recyclable parts and wastes according to established procedures in a familiar workplace; familiarizing with the emergency and contingency measures and implementing them safely and efficiently so as to minimize danger and pollution.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Monitor and maintain instruments and equipment
Code	108695L3
Range	This unit of competency is applicable in vehicle body assembling and servicing workshops. Practitioners should be able to monitor and maintaining instruments and equipment according to the maintenance and user guide provided by equipment manufacturer.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operating principles and maintenance procedure for vehicle body servicing instruments and equipment) • Good understanding of the use of vehicle body servicing instruments and equipment. • Good understanding of the user guide of vehicle body servicing instruments and equipment. • Good understanding of the operating principles of vehicle body servicing instruments and equipment. • Understand the laws and regulations in relation to vehicle body servicing instruments and equipment. 2. Performance (Monitor and maintain instruments and equipment) • Implement or arrange maintenance plan for instruments and equipment according to the user and maintenance guide provided by vehicle body servicing instruments and equipment manufacturer: Such as: ◦ Body Jack ◦ Body Stand ◦ Body Repair Chain ◦ Welding tools and equipment. • Conduct initial fault diagnosis for faulty instruments and equipment; and issue suspension notice. • Conduct regular inspection and fine-tuning on instruments and equipment.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of implementing or arranging maintenance plan for instruments and equipment according to the user and maintenance guide provided by instruments and equipment manufacturer; and • Capable of conducting inspection and fine-tuning on instruments and equipment.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of operating vehicle instruments and equipment.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Test drive and report the condition of vehicles
Code	108701L3
Range	This unit of competency is applicable in vehicle servicing. Practitioners should be able to test drive the vehicles on chassis dynamometer or on road according to organisational policy, the instructions in the vehicle manufacturer's manual and relevant road traffic regulations masterly, so as to check the vehicle, conduct fault diagnosis or confirm completion of rectification work. Providing written report after the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Procedural guidelines and relevant regulations on vehicle testing) • Good understanding of the organisational policy on vehicle testing. • Good understanding of vehicle manufacturer's guidelines on vehicle testing procedure. • Good understanding of relevant equipment and instruments for vehicle testing. • Good understanding of the road traffic regulations, including road test and the use of T-plate. 2. Performance (Process vehicle testing) • With reference to organisational policy on vehicle testing and vehicle manufacturer's guidelines on vehicle testing procedure, test various vehicle systems by visual inspection and instruments, including: ◦ Conduct the test by the use of equipment and instruments – use chassis dynamometer to simulate different road conditions ◦ Conduct road test in compliance with road traffic safety instructions • Detect potential deficiency in vehicles. • Conduct fault diagnosis on vehicles. • Provide suggestions on repair items. • Confirm rectification after repair job is done. • Check vehicle component defect by visual inspection. • Issue document to confirm rectification of fault. • Complete report on outstanding defect of the vehicle with repairing suggestions included. • Complete the vehicle condition report and provide written report after the work. • Determine that the vehicle systems and components as well as the vehicle tests can meet the requirements of relevant road traffic regulations. • Be familiar with relevant procedure and regulations on the use of T-plate.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting accurately vehicle testing and check, fault diagnosis and confirming completion of rectification work according to the instructions in the vehicle manufacturer's manual and relevant road traffic regulations;

	• Capable of providing accurate and suitable suggestions on repair items and providing written report; and • Capable of ascertaining that the vehicle systems and components can meet the requirements of relevant road traffic ordinance/ regulations.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the capability to conduct fault diagnosis on various vehicle systems and possess driving licence for the vehicle types involved. The major legislations/rules involved in this unit of competency are as follows: • Road Traffic (Registration and Licensing of Vehicles) Regulations- Limitations of use of trade licence, display of trade plates and licence, Register of journeys under trade licence and Trade licence not transferable • Road Traffic (Construction and Maintenance of Vehicles) Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis and analysis on vehicle electronic data control systems
Code	108707L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to independently check, repairing, analysing and evaluating various types of vehicle electronic/data control systems and equipment according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be capable of conducting fine-tuning, test and evaluation of system components and providing written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various types of vehicle electronic control systems and equipment) • Good understanding of the structure and operating principles of various types of vehicle electronic control systems and equipment. • Good understanding of the principles of electricity, electronics and data control. • Good understanding of the inspection, service and analysis procedure for various types of vehicle electronic/data control systems and equipment according to servicing instructions provided by vehicle manufacturer or parts supplier. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Conduct fault diagnosis and analysis on various types of vehicle electronic control systems and equipment) • Safely conduct fault diagnosis on various types of vehicle electronic control systems and equipment and repair them according to the information in the servicing manual provided by vehicle manufacturer or parts supplier and the requirements of occupational safety and health as well as environmental protection, including: ◦ Find out common problems of vehicle electronic control systems and equipment by visual inspection ◦ Select suitable tools and instruments to inspect and measure various types of vehicle electronic control systems and equipment and conduct fault diagnosis, calculation and analysis of the problems in the systems according to different data and circumstances ◦ Conduct appropriate rectification work according to the faults found; work may include dismantle, replace, re-assemble and fine-tune relevant system components and accessories ◦ Measure, test and evaluate the operation and efficiency of various types of vehicle electronic/data control systems and equipment ◦ Provide written report after confirming that rectification is done

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of independently conducting complicated fault diagnosis on vehicle electronic/data control systems and equipment according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; • Capable of implementing or arranging rectification work for relevant systems according to diagnostic results; and • Capable of conducting relevant system tests and evaluation and providing written report upon completion of work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of vehicle electronic and electric systems servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct maintenance for special equipment and instruments for vehicle inspection
Code	108715L3
Range	This unit of competency is applicable in vehicle servicing workplaces. Practitioners should be able to conduct maintenance for special equipment and instruments for vehicle inspection according to vehicle manufacturer's manual.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Maintenance for special equipment and instruments for vehicle inspection) • Master the maintenance manual on special equipment and instruments for vehicle inspection. • Master the operating method for testing instruments and equipment. 2. Performance (Conduct maintenance for special equipment and instruments for vehicle inspection) • Conduct maintenance for special equipment and instruments for vehicle inspection regularly according to the instructions in the vehicle manufacturer's manual, including: ◦ Check and clean ◦ Fine tune and calibrate ◦ Top up materials and replace consumable materials ◦ Keep documents in relation to instruments and equipment, such as operating manual ◦ Keep, update, reset and upgrade computer software relevant to equipment ◦ Update and maintain the maintenance and repair records/information of those instruments and equipment. • Conduct maintenance for special equipment and instruments for vehicle inspection, such as: ◦ Exhaust gases analysers for petrol engines ◦ Diesel engine smoke meters ◦ Chassis dynamometers ◦ Engine dynamometers ◦ Engine analysers ◦ Hand held testers ◦ Brake testers ◦ Wheel aligners ◦ Wheel balancers ◦ Headlamp aligners ◦ Refrigerant recovery and reclaim station ◦ Liquefied gas testing equipment ◦ Other special equipment and instruments for vehicle inspection.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of masterly conducting maintenance on special equipment and instruments for vehicle inspection according to vehicle manufacturer's manual; and • Capable of updating and maintaining the documents concerning the special equipment and instruments for vehicle inspection.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already understood the basic operation of special equipment and instruments for vehicle inspection and general computer operation.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnosis and rectify motorcycle engine and components faults
Code	108718L3
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to conduct complicated fault diagnosis on motorcycle engine and components and conduct or arrange rectification according to the instructions in the motorcycle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct functional tests and complete simple fault report upon completion of work and providing written report.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of motorcycle engine and components) • Master the structure and operating principles of motorcycle engine and components. • Master the fault diagnosis process for motorcycle engine and components with reference to the instructions in the motorcycle manufacturer's service manual: ◦ Faults occur within: ▪ Engine mechanical systems ▪ Engine electrical and electronic systems ▪ Engine hydraulic and fluid systems ◦ Equipment used: ▪ Diagnostic and rectification equipment for various systems ▪ Special repair tools • Understand relevant legal requirements on road & safety and environment protection. 2. Performance (Conduct diagnosis and rectify motorcycle engine and components faults) • Accurately conduct complicated fault diagnosis on motorcycle engine and components according to the instructions in the manufacturer's service manual, including the use of special equipment and instruments to assist the diagnostic process, meeting requirements of occupational health and safety and that of environmental protection. • Accordingly process the rectification work. • Conduct functional tests. • Conduct performance and safety inspection after the work and provide written report, focusing on: ◦ Abnormalities ◦ Measuring data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of conducting complicated fault diagnosis on motorcycle engine and components according to the instructions in the manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of conducting or arranging rectification according to diagnostic results; • Capable of conducting performance tests and completing working report upon completion of work. • Capable of conducting emission test within the limit of the emission regulations.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of operation of motorcycle engine and components. The major legislations/code involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose and rectify motorcycle chassis systems faults
Code	108719L3
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to conduct complicated fault diagnosis on motorcycle chassis systems and implementing or arranging rectification according to the instructions in the motorcycle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able of conduct functional tests and providing written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Structure and operating principles of motorcycle chassis systems)
	• Have good understanding of the structure and operating principles of motorcycle chassis systems, including:
	  ○ Steering systems
	  ○ Suspension systems
	  ○ Brake systems
	• Master the fault diagnosis process for motorcycle chassis systems with reference to the instructions in the motorcycle manufacturer's service manual:
	  ○ Faults occur within:
	  ▪ Mechanical systems
	  ▪ Electrical and electronic systems
	  ▪ Hydraulic systems
	  ○ Equipment used:
	  ▪ Diagnostic and rectification equipment for various systems
	  ▪ Special repair tools
	• Understand relevant legal requirements on road & safety and environment protection.
	2. Performance (Conduct diagnosis and rectify motorcycle chassis systems faults)
	• Accurately conduct fault diagnosis on motorcycle chassis systems according to the instructions in the manufacturer's service manual including using special equipment and instruments to assist the diagnosis, meeting the requirements concerning occupational health and safety and that of environmental protection.
	• According to the diagnostic result to implement the rectification work.
	• Conduct functional tests.
	• Conduct performance and safety inspection after the work and provide written report, focusing:
	  ○ Abnormalities
	  ○ Measuring data
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting complicated fault diagnosis on motorcycle chassis systems according to the instructions in the manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations; • Capable of implementing or arranging rectification according to diagnostic results; and • Capable of conducting performance tests and providing working report upon completion of work
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of operation of motorcycle chassis systems. The major legislations/code involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose and rectify motorcycle transmission and driveline system faults
Code	108720L3
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to conduct fault diagnose on motorcycle transmission and driveline systems and implementing or arranging rectification according to the instructions in the motorcycle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able of conduct functional tests and providing written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Structure and operating principles of motorcycle transmission and driveline systems)
	• Master the structure and operating principles of motorcycle transmission and driveline systems, including:
	  ○ Transmission
	  ○ Hubs and bearings
	  ○ Drive
	  ○ Clutch
	• Master the fault diagnosis process for motorcycle transmission and driveline systems with reference to the instructions in the motorcycle manufacturer's service manual:
	  ○ For faults occur within:
	  ▪ Mechanical systems
	  ▪ Electrical and electronic systems
	  ▪ Hydraulic systems
	  ○ Equipment used:
	  ▪ Diagnostic and rectification equipment for various systems
	  ▪ Special repair tools
	• Understand relevant legal requirements on road & safety and environment protection.
	2. Performance (Conduct diagnosis and rectify motorcycle transmission and driveline systems faults)
	• Accurately conduct fault diagnosis on motorcycle transmission and driveline systems according to the instructions in the manufacturer's service manual, including the use of special equipment and instruments to assist the diagnosis, meeting the requirements of occupational health and safety and that of environmental protection.
	• Implement the rectification work.
	• Conduct performance and safety inspection after the work and provide written report, focusing on:
	  ○ Abnormalities
	  ○ Measuring data
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting fault diagnosis on motorcycle transmission and driveline systems according to the instructions in the manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations; • Capable of conducting or arranging rectification according to diagnostic results; and • Capable of conducting performance tests and completing working report upon completion of work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of operation of motorcycle transmission and driveline systems. The major legislations/code involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose and rectify motorcycle electrical system faults
Code	108721L3
Range	This unit of competency is applicable in motorcycle servicing workshops. Practitioners should be able to conduct fault diagnose on motorcycle electrical systems and implementing or arranging rectification according to the instructions in the motorcycle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct performance tests and providing written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Structure and operating principles of motorcycle electrical systems)
	• Master the structure and operating principles of motorcycle electrical systems, including:
	  ○ Lighting
	  ○ Security and alarm
	  ○ Comfort and convenience
	  ○ Electrical rider safety
	• Master the fault diagnosis process for motorcycle electrical systems with reference to the instructions in the motorcycle manufacturer's service manual and use of equipment, such as:
	  ○ Multimeters
	  ○ Battery testing equipment
	  ○ Dedicated and computer based diagnostic equipment
	  ○ Monitoring and instrumentation systems
	• Understand relevant legal requirements on road & safety and environment protection.
	2. Performance (Conduct diagnosis and rectify motorcycle electrical systems faults)
	• Accurately conduct fault diagnosis on motorcycle electrical systems according to the instructions in the manufacturer's service manual including the use of special equipment and instruments to assist the diagnosis, meeting the requirements of occupational health and safety and that of environmental protection.
	• According to the diagnostic result to implement the rectification work.
	• Conduct system performance and safety tests after the work and provide written report, focusing:
	  ○ Abnormalities
	  ○ Measuring data
	  ○ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting fault diagnosis on motorcycle electrical systems according to the instructions in the manufacturer's service manual and the relevant requirements on environment, occupational safety

	and health regulations; and • Capable of conducting or arranging rectification according to diagnostic results; • Capable of conducting performance and safety tests and completing working report upon completion of work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of operation of motorcycle electrical systems. The major legislations/code involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Liaise with vehicle and product manufacturers on technical matters
Code	108727L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to identify and documenting various technical problems clearly, reporting to the vehicle and product manufacturers precisely and promptly such that support for diagnosis, repairs, claims, and product development could be obtained. He/she may need proposing temporary local fixes and seek for other administrative support, following through the problem, and initiate improvement actions.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Identify and record various technical issues, contact the manufacturer for solutions)
	• Master and identify various technical issues. Such as:
	  ○ Diagnosis
	  ○ Maintenance
	  ○ Warranty Claim
	  ○ Product Development Support
	• Have good understanding of the method to record technical issues.
	• Have good understanding of the established communication channels with the manufacturers for submitting technical reports properly.
	• Master how to liaise with the manufacturer to get the solutions for the technical problems.
	2. Performance (Master the nature of various technical issues, obtain manufacturer solutions, seek support and initiate improvement actions)
	• According to manufacturer's instruction master the technical issues in respects of:
	  ○ nature
	  ○ frequency
	  ○ implications
	• Formulate action plan, such as:
	  ○ Coordinate with the manufacturer and request for solution
	  ○ Seek support
	  ○ Suggest temporary fix
	• Formulate and initiate improvement actions.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner shall prove that he/she is: • Capable of identifying various technical problems and formulating the course of action required • Capable of liaising with vehicle/ product manufacturers on technical matters • Capable of obtaining and implementing solutions from manufacturers and suggesting temporary local fixes whenever necessary; and

	• Capable of consolidating the problem and initiating preventive measures
Remark	The credits value of this unit of competency assumes that the assessee has already possessed basic knowledge and skills of vehicle diagnosis as required of a vehicle technician. The major legislation/code involved in this unit of competency are as follows: • Road Traffic Ordinance • Air Pollution Control Ordinance • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct diagnostic consultations with customers
Code	108728L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to attend to the customer's concerns and needs politely and tactfully, including carrying out vehicle diagnosis with the customers. He/she should need explaining clearly the findings and recommendation on the course of action, ensuring that they are well understood, considered and accepted by the customer. On the basis of need and organizational policy, he/she may need proposing temporary local fixes and seek for other relief measures, following through the problem, and initiating organization improvement actions.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Prerequisites of conducting diagnostic consultations with customers in vehicle environments) • Have good understanding of the organization chart, procedures and limits of authority of colleagues. • Master the policies of manufacturers and own organisation on vehicle/ product problems and related claims. • Have good understanding of the designated communication channels with colleagues for technical and administrative support. • Master the communication and handling skills with customers. • Understand the manufacturer's instruction (service manual or supplementary information), or temporary local measures agreed by the management for diagnosis and solving problems. • Good understanding of the functions, application and limitations of diagnostic equipment. • Good understanding of the report writing skill. • Understand the relevant legal requirements on road and vehicle safety, environment protection and OSH.

	2. Performance (Conduct diagnostic consultations with customers in vehicle environments)
	• Identify problems with the car/product as directed by the manufacturer and considering the nature, frequency, meaning, diagnostic results, statistics, and feedback from colleagues and guests.
	• Perform diagnostic activities and attend road tests with customers if required in a professional manner.
	• Respond to customer reactions and complaints politely and tactfully.
	• Explain clearly technical problems, diagnostic results, and recommendations in a way such that layman can understand.
	• Formulate the course of actions required, such as:
	  ◦ Normal service, rework, or manufacturer / internal claims
	  ◦ Devising temporary local fixes on the basis of need and organizational policy
	  ◦ Referring to colleagues for further relief measures (e.g. obtaining rare parts or substitute vehicles) on basis of need and organizational policy
	• Submit well-defined quotations for consideration, acceptance and signature by the customer.
	• Initiate workshop repair order and follow through until full rectification, and keep customers informed of progress.
	• Consolidate the events and raise internal technical bulletin for precaution and training purpose if deemed necessary.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering and identifying technical problems and construct required action plans • Capable of communicating effectively with customers instilling confidence • Capable of obtaining administrative and technical support from colleagues in resolving customer concerns and, providing temporary local relief measures whenever necessary and possible. • Capable of following through customer concerns until full rectification; and • Capable of consolidating the problem and initiating preventive measures
Remark	The credit value of this unit of competency assumes that the practitioner has already possessed basic knowledge and skills of vehicle diagnosis as required of a vehicle technician. The major legislation/code involved in this unit of competency are as follows: • Road Traffic Ordinance • Air Pollution Control Ordinance • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Offer servicing advice and consulting services
Code	108747L3
Range	This unit of competency is applicable in vehicle service/servicing centres. Practitioners should be able to offer services and servicing advice to customers, follow up the services and ensure customers satisfaction.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Offer servicing advice and consulting services) • Master basic customer service knowledge and understand its importance. • Master the vehicle manufacturer's requirements of brand/product services. • Master the main characteristics, range and charges of the organisation's products/services. • Master the flow and progress of the organisation's products/services and maintain contact with customers. • Good understanding of customer satisfaction concept and index. 2. Performance (Implement offer servicing advice and consulting services) • Base on the vehicle manufacturer guidelines on brands/product services and that of the organisation, receive customers and understand their needs as well as offer advice, price estimation and services under different circumstances/ situations including: ◦ Record customers' requirements and demands in a professional manner; and offer appropriate advice on products/services ◦ Explain the characteristics, range and charges of relevant products/services ◦ Maintain contact with customers to make appropriate price estimation and quotation with acquisition of information on the supply and progress of the products, parts and services of relevant departments ◦ Monitor the supply and progress of relevant departments; and coordinate the work arrangement of different parties ◦ Follow up the quality of services to ensure they can meet customers' demands and requirements; and maintain communication and good relationship with customers ◦ Capable of answering customers' further enquiries
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of receiving customers responding to their needs according to the organisational regulations and guidelines under different situations/circumstances; and offering appropriate products/services or advice to satisfy customers' needs; and • Capable of monitoring the progress and quality of services to ensure that customers' requirements are met.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle service/servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Handle after-sales warranty claim
Code	108748L3
Range	This unit of competency is applicable in vehicle service/servicing centers. Practitioners should be able to assess if the defects of customers' vehicles are covered within the vehicle manufacturer's coverage of warranty by individual cases in accordance with organisational procedure. They should also submit report on the description of defects, and coordinate with the service advisor to arrange with customers for the manufacturer's warranty-claim services.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (After-sales warranty claim services) • Master the vehicle manufacturer's maintenance requirements for vehicles as well as the warranty coverage, terms and policy for vehicle faults and damages. • Master the causes of vehicle faults and damages and also analyse the liabilities involved. • Master the procedure of vehicle servicing and its workflow. • Master the application procedure for warranty claims of defects and submission of the required information. • Master the arrangement and procedure of the manufacturer's warranty campaign services. 2. Performance (Handle after-sales warranty claim) • Evaluate the vehicles fault or damage and assess whether it fulfills the manufacturer warranty requirement, policy and coverage. • Arrange necessary repair work according to the assessment. • Analyse the causes for vehicles fault or damage according to the defect of different vehicles and submit report to relevant departments. • Coordinate with service advisors to arrange maintenance and repair according necessary maintenance procedure. • Submit application for warranty claims of repair, compile damage and services report. • Coordinate with the service advisor to make arrangement with customers for the manufacturer's warranty-claim services.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of assessing the need for repair or services and making necessary arrangements according to the manufacturer's coverage and terms of warranty on defects of vehicles; and • Capable of coordinating and making arrangement for the services/repair required for respective vehicles according to the vehicle manufacturer's warranty campaign services.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of vehicle inspection and servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Promote repair/maintenance services and consulting services
Code	108750L3
Range	This unit of competency is applicable in vehicle service/servicing centers. Practitioners should be able to receive customers according to the organisation's established procedure and capable of understanding customers' requirements for vehicle services/maintenance. They should also be able to employ communication skills to promote products/services to customers and provide suitable suggestions to facilitate transactions.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Repair and maintenance services and consulting services) • Master the influence of personal appearance and inter-personal communication skills of services consultants on matters of confidence and image building of the organisation. • Master about customer psychology. • Good understanding of market trend and the characteristics of the organisation and other competitors in the market. • Good understanding the provision of other products/services in the market and contact other product/service supplier to arrange the relevant procedure for provision of products/services. 2. Performance (Promote repair and maintenance and consulting services) • Receive customers under different situations/circumstances according to organisational instructions and understand customer needs; provide suggestions on repair and maintenance and services of vehicles; also understand customer psychology so as to promote products/services to customers, including: ◦ The characteristics, workflow and charges of the products/services provided by the organisation and other competitors in the market; and obtain detailed information so as to sell and promote products/services to customers ◦ The psychology of different customers on the products/services required; make different suggestions and analysis according to the needs of different types of customers; and develop corresponding marketing and promotion strategies ◦ The products/services provided by different departments and the progress; coordinate the work of different departments; obtain accurate information and maintain contact with customers to make appropriate report and follow-up actions ◦ Source, contact and arrange other product/service suppliers to provide products/services when the organisation failed to provide the required products/services; coordinate the arrangement and progress of different parties; and calculate the charges, cost and profits involved ◦ Take follow-up actions on the quality of respective products/services to ensure that the products/services can meet customer needs and demands; and maintain contact and good relationship with customers

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of providing advice on vehicle services under different situations/circumstances according to organisational instructions and requirements; provide suggestions according to customer needs; and arranging different products/services to meet customer needs; • Capable of understanding the psychology and requirements of customers on products/services; and employing communication and psychological skills to promote sales and facilitate transactions; and • Capable of following-up on the progress and quality of services provided to ensure the services provided can meet customers' requirements.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of vehicle servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Provide services on value assessment and trade-in of vehicles
Code	108753L3
Range	This unit of competency is applicable in vehicle showrooms or exhibition venues. Practitioners should be able to provide customers with services on value assessment and trade-in of vehicles according to organisational guidelines.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Value assessment of vehicles) • Master the calculation method for value assessment of vehicles, including second hand market and their prices. 2. Performance (Provide services on value assessment and trade-in of vehicles) • Master vehicle trade-in transactions; capable of calculating the cost of used vehicles and understand the handling procedure, including estimation of general vehicle serving charges, interests and second-hand market. • Ascertain the legality of trade-in vehicles, such as any illegal modification or prohibition order received. • Provide services on value assessment of vehicles to customers according to organisational guidelines. • Provide customers with suggestions on value assessment and trade-in of vehicles • Handle the trade-in vehicle to the best benefit of the organisation.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of evaluating vehicle values and facilitating trade-in of vehicles according to organisational guidelines; and • Capable of handling trade-in used vehicles of depreciated value.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of vehicle servicing.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Judge the legitimacy of vehicle usage under laws and regulations (transport, environmental protection and road safety)
Code	108769L3
Range	This unit of competency is applicable in workplaces relevant to the purchase of vehicles and auto parts and accessories as well as vehicle sales and servicing. Practitioners should be able to familiarize with Hong Kong's regulation on vehicles in aspects such as traffic, environmental protection and road safety. They should also be capable of determining the legality of the use of vehicles/parts and accessories under legislative regulation with adequate information.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Regulation and respective legislations on vehicles) • Master the scope of regulations on vehicles in Hong Kong. • Be capable of access relevant information and relevant laws and regulations. • Good Understanding of local laws and regulations on the structure of vehicles (e.g. mechanical and vehicle body.), pollution (e.g. noise, emission.) and road safety. • Good Understanding of the statutory requirements and relevant policies on pollution generated by vehicles (e.g. emission) in Hong Kong and other countries. 2. Performance (Determine the legality of the use of vehicles under respective laws and regulations) • Determine the legality of vehicles/parts and accessories being sold and used in Hong Kong according to respective laws and regulations with adequate information, including: ◦ The structure of vehicles ◦ Pollution ◦ Road safety
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the regulatory categories, respective laws and regulations on vehicles (traffic, environmental protection and road safety); and • Capable of determining the legality of the use of vehicles under the respective ordinances and regulations on condition that adequate information is available.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner being assessed has already possessed basic knowledge of vehicle.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Control vehicle servicing workflow
Code	108787L3
Range	This unit of competency is applicable to vehicle servicing workshops. Practitioners should be able to communicate with staffs in different departments effectively and obtain various information on service workshops and vehicle servicing processes. They should also exercise flexible deployment of vehicle servicing logistics to effectively control vehicle servicing process.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Servicing workshops) • Good Understanding of with the work areas and duration required for various servicing procedure. • Master the specific functions of different areas within the servicing. workshop and its manpower availability. • Good Understanding of with the storage capacity and characteristics of servicing workshops and related car park. 2. Performance (Define the vehicle servicing workflow and coordinate the processes) • Define the workflow for each vehicle base on service requirements. • Maximise the workshop productivity by flexible arrangement base on the utilization level of different areas within the servicing workshops, the servicing procedures required by different vehicles, the supply of spare parts and servicing staffs, the target completion date of different vehicles and the authorisation of relevant servicing orders. • Communicate with staffs in different departments to obtain relevant information to facilitate deployment decision. • Coordinate security measures in the monitoring of vehicles to ensure that vehicles are stored safely and properly in the course of servicing. • Flexibly implement established contingency measures under special circumstances.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of communicating with staffs in different departments effectively to obtain information on vehicle servicing, such as the utilization level of servicing areas, the arrangement of servicing staffs and spare parts, target completion date and the authorisation of servicing orders; and obtain the resources required for various servicing procedures to make flexible deployment of vehicle servicing logistics; and • Capable of coordinating the storage of vehicles in different areas to attain good vehicle security.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Handle general accidents at work
Code	108788L3
Range	This unit of competency is applicable to the workplaces of the automotive industry (e.g. vehicle servicing workshops and vehicle parts stores/ warehouses). Practitioners should be able to handle and take follow-up action in the event of accidents.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Typical accidents at work) • Good understanding of the categories and causes of typical accidents in the automotive industry, such as crush, injury, cut, burnt, fire accident, direct contact of chemicals by skin or eyes, electric shock, explosion, gas leakage and fall from height and be familiar with their severity and immediate potential risks. • Know about the organisation's emergency and contingency measures, such as fire prevention apparatus, the location of first-aid kit and emergency exit. 2. Performance (Handle typical accidents) • Collect relevant information when the accident occurs and understand the severity and immediate potential risks of the accident so as to make appropriate decision according to organisational guidelines, such as: ◦ Immediate in-house treatment ◦ Sent to hospital ◦ Call the police ◦ Emergency evacuation. • Handle the case according to organisational guidelines, such as report to supervisor as soon as possible and complete relevant record.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the categories and nature of typical accidents at work; and • Capable of making suitable adjustment and arrangement with respect to the severity and immediate risks of the accident occurred according to organisational guidelines, emergency and contingency measures in a familiar working environment.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Manage customer relationship
Code	108794L3
Range	This unit of competency is applicable in workplaces relevant to vehicle sales and its after-sales services. Practitioners should be able to employ customer relationship management techniques appropriately to maintain good relationship with customers to strengthen the company's business and reputation.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Customer relationship management)
	• Understand customer relationship management theory, such as:
	  ◦ Customer knowledge
	  ◦ Customer satisfaction
	  ◦ Establishment of customer relationship
	  ◦ The ethical concept of customer relationship
	• Master customer relationship management techniques.
	• Good understanding of the vehicle manufacturer's policy on brands/product services and organisational policy on customer relationship management.
	• Good understanding of general customer information and management of information system including privacy protection and regulations.

	2. Performance (Manage customer relationship)
	• Establish and maintain stable and permanent relationship with customers according to the guidelines and policies of the vehicle manufacturer and the organisation, such as:
	  ◦ Routine customer interaction management, e.g. visits, mails and other electronic communications
	  ◦ Communication and interaction record management, e.g. conversations, phone calls, emails and letters
	  ◦ Maintain record of customers' crucial information
	  ◦ Monitor reports on customer relationship, such as:o
	  ▪ Answer enquiries, make quotation and verification
	  ▪ Keep promises
	  ▪ Handle customers' complaints
	  ◦ Customer evaluation and classification
	  ◦ Handle general customer information system management, such as:
	  ▪ Keep customer information on file
	  ▪ Retrieve data base and data
	  ▪ Update data
	  ▪ Analyse relationship
	  ▪ Compile reports
	  ▪ Make back-up
	  ▪ Maintain close contact with other departments in the organisation (e.g. service department or sales department) to fully utilise customer information

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding customer relationship management theory; and • Capable of employing customer relationship management techniques appropriately to maintain good relationship with customers; and fully utilising customer information to strengthen and enhance business.
Remark	The practitioner concerned already understand the Data Privacy Ordinance

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Unit of Competency

Functional Area - Common Competency

Title	Fulfil the requirements on environmental protection (electrical and mechanical servicing)
Code	108804L3
Range	This unit of competency is applicable to technical personnel in various kinds of electrical and mechanical servicing workshops of the automotive industry. Practitioners should be able to understand the environmental protection concept and comply with environmental protection requirements when working in a familiar vehicle servicing workshop.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Environmental protection concept) • Good understanding of the statutory requirements on environmental protection ordinances applicable to the department which one belongs to. • Good understanding of organisational instructions on the requirements of environmental protection.

	2. Performance (Comply with requirements on environmental protection) • Comply with organisational instructions on environmental protection in familiar electrical and mechanical servicing workshops; and cautiously carry out the procedure that may cause pollution so as to protect the environment, such as: ◦ Prevent leakage of engine oil, fuel, gearbox oil, organic dissolvent, paint, engine coolant and various kinds of hydraulic oil into the land and prevent discharge of these pollutants into sewer, river, stream or sea. Relevant work should be carried out on the floor coated with leak-proofing material or covered with leak-proofing canvas. All procedures should be handled according to the Code of Practice for Chemical Waste Producers ◦ Prevent disposing empty utensils containing organic substances (e.g. abandoned oil container, abandoned oil filter and washing cloth, etc.) together with general waste ◦ Testing of engines or vehicle emission should be carried out in indoor workshops with exhaust gas extraction system so as to reduce the nuisances caused by exhaust gas ◦ Collect all refrigerants by approved refrigerant recycling equipment before opening up of the refrigerant lines. Take precaution measures to prevent leakage of refrigerant in the process and maintain records on utilisation of refrigerants. ◦ Work that will generate large amount of effluent such as car or engine washing should be carried out in workshops with Water Pollution Control Ordinance Licence; and should keep the utilisation of cleansers, chemicals and fresh water under control ◦ Use vacuum cleaning equipment, cleansers and containers for collection purposes in carrying out procedures that generate suspended particles such as brakes and clutches repairing etc. so as to avoid tiny particles suspended in the air or dropping of contaminated solvent on the shop floor. ◦ Works that generate noise, such as testing of engines, or exhaust gas, and use of pneumatic tools, should be carried out in indoor workshops within specified timeframe to avoid causing noise nuisances ◦ Works involving dangerous chemicals and pollutants should be carried out according to procedures ◦ Sort, recycle and handle the wastes or recyclable parts according to established instructions prior to disposal. • Be familiar with the organisation's contingency measures on pollutant leakage and capable of handling the situation and efficiently so as to minimize danger and pollution. • Confirm the compliance with the statutory requirements on handling chemical wastes, waste water discharge and utilization of refrigerants.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of fully understanding the environmental protection ordinances and organisational requirements on environmental protection; and carry out the work carefully to protect the environment; • Capable of carrying out the duties involving dangerous chemicals, pollutants, recoverable parts and waste according to established procedure in a familiar electrical and mechanical servicing workshop; and • In case of pollutant leakage, capable of implementing the contingency measures safely and efficiently in handling and following up, so as to minimize danger and pollution.
Remark	The major relevant legislation/rule involved in this unit of competency is as follows: • Waste Disposal (Chemical Waste) (General) Regulation

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Functional Area - Common Competency

Title	Fulfil the requirements on environmental protection (vehicle body servicing)
Code	108805L3
Range	This unit of competency is applicable to technical personnel in various kinds of vehicle body servicing workshops (including painting workshops) of the automotive industry. Practitioners should able to understand environmental protection concept and comply with environmental protection requirements when working in a familiar servicing workshop.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Environmental protection concept) • Good understanding of the statutory requirements of environmental protection ordinances applicable to the department which one belongs to. • Good understanding of organisational instructions on the requirements of environmental protection.

	2. Performance (Comply with environmental protection requirements)
	• Comply with organisational instructions on environmental protection in a familiar vehicle body servicing workshop; and cautiously carry out the procedure that may cause pollution so as to protect environment, such as:
	  ◦ Prevent leakage of chemicals such as paint and organic dissolvent etc. into the land and prevent discharge of these pollutants into sewer, river, stream or sea. Relevant work should be carried out according to the Code of Practice for Chemical Waste Producers.
	  ◦ Prevent disposing empty utensils containing organic substances (e.g. abandoned oil container, abandoned oil filter and washing cloth, etc.) together with general waste.
	  ◦ Works that release smells or organic particles, such as vehicle painting, etc., should be carried out in workshops equipped with air treatment facilities.
	  ◦ Works that produce smoke, powder and dust, such as vehicle body polishing, metal cutting and welding should be carried out in indoor workshops equipped with air treatment facilities. Workshop cleanliness should also be emphasised so as to prevent dust, smell, smoke, ozone, suspended particles and powder suspending in the air.
	  ◦ Works that generate large amount of effluent such as car or engine washing should be carried out in workshops with Water Pollution Control Ordinance Licence; and should keep the utilisation of cleansers, chemicals and fresh water under control.
	  ◦ Works that generate noise, such as the hitting and striking procedure and use of pneumatic tools, should be carried out in indoor workshops within specified timeframe to avoid causing noise nuisances.
	• Works involving dangerous chemicals and pollutants should be carried out according to procedure.
	• Sort, recycle and handle the waste or recyclable parts according to established instructions prior to disposal.
	• Be familiar with the organisation’s contingency measures on pollutant leakage; and capable of handling the situation safely and efficiently so as to minimize danger and pollution.
	• Confirm the compliance with the statutory requirements on handling chemical wastes and waste water discharge.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of fully understanding the environmental protection ordinances and organisational requirements on environmental protection; and carry out the work carefully to protect environment; • Capable of carrying out the duties involving dangerous chemicals, pollutants, recoverable parts and wastes according to established procedure in a familiar vehicle body servicing workshop; and • In case of pollutant leakage, capable of implementing the contingency measures safely and efficiently in handling and following up, so as to minimize danger and pollution.
Remark	The major relevant legislation/rule involved in this unit of competency is as follows: • Waste Disposal (Chemical Waste) (General) Regulation

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Functional Area - Common Competency

Title	Conduct demonstration of technical skills
Code	108814L3
Range	The practitioner should be able to conduct demonstration of technical skills properly in a safe and undisturbed environment, taking into account the different learning ability and progress of learners and be able to respond to the questions raised.
Level	3
Credit	1 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Technical demonstration skills) • Understand the detailed steps to perform each task, and how to split various. technical tasks for demonstration purpose • Know the difference in progress of learners in the learning process. • Know how to teach learners to ask questions at appropriate stages. • Know the ways to respond to learners' questions 2. Performance (Conduct technical demonstrations safely and effectively) • Carry out demonstration of technical skills for various work procedures • Observe the progress of the learners and supplement with appropriate explanations • Ensure the learners can learn in an undisturbed environment • Ensure the demonstration be carried out in a safe environment, and allow learners to see the demonstration clearly
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of conducting technical demonstration properly and safely.
Remark	

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Functional Area - Vehicle Inspection and Prosecution

Title	Handle the documents for vehicle inspection
Code	111646L3
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provisions. Practitioners should be able to accurately comprehend the handling of documents for vehicle inspection according to the statutory document system for vehicle examination.
Level	3
Credit	2 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Document system for vehicle examination) • Good understanding of the types of documents used for vehicle examination, their functions, applications and validity. • Comprehend the documents required for specific purposes in the vehicle examination process and their adaptations. • Acquainted with the correct information in the documents with reference to the guidelines and instructions of the vehicle examination system. 2. Performance (Handling of the documents for vehicle inspection) • Identify the functions and applications of various documents for vehicle examination. • Correctly verify the consistency of information between the documents and the inspected vehicles, such as the registration document, exemption or approval letter, onboard equipment setup certificate, etc. • Professionally record the defects and necessary information on the designated forms during the inspection process. • Report uncertainties or suspected fraudulent information to seniors in a timely manner.
Assessment Criteria	The integrated outcome requirements of this unit of competence are that the practitioner being assessed shall prove that he/she is: • Capable of identifying the functions, applications and validity of various documents for vehicle examination; • Capable of verifying the consistency of information between the documents and the inspected vehicles; and • Capable of professionally recording the defects and necessary information on the designated form during the inspection process.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge of vehicle servicing and vehicle examination procedures.

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Functional Area - Vehicle Inspection and Prosecution

Title	Apply the local regulations on environmental protection, road and vehicle safety in vehicle examination; and apply occupational safety and health for the associated risk handling
Code	111647L3
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provisions. Practitioners should be able to masterfully apply the local regulations and guidelines on environmental protection, road and vehicle safety, and occupational safety and health for vehicle inspection, and correctly handle the risks arising from work.
Level	3
Credit	4 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Regulations on environmental protection, road and vehicle safety, and occupational safety and health, risk handling)
	• Conversant with the requirements and scope of application of the regulations/guidelines on environmental protection, road and vehicle safety, and occupational safety and health in relation to vehicle examination.
	• Master the use of special service tools and detection devices, personal protection and first-aid equipment for the vehicle inspection tasks.
	• Good understanding of the risk assessment procedures and the judgment criteria on potential hazards.
	2. Performance (Application of relevant regulations and risk handling)
	• Accurately apply the relevant regulations and guidelines for vehicle inspection tasks, including:
	  ◦ environmental protection, such as air quality, noise and emissions control, waste disposal, etc.
	  ◦ road and vehicle safety, such as vehicle structure, dimensions and weights, use and maintenance, etc.
	  ◦ occupational safety and health, such as the working environment and setup, personal protective and first-aid equipment, working procedures, gas and electricity safety, etc.
	• According to the instructions in the corresponding vehicle manufacturer's manual, judgment criteria and the requirements of gas safety, electricity safety, occupational safety and health, as well as that of environmental protection, safely process the risk assessment and identify the handling procedures for various inspection activities, including:
	  ◦ Apply the information about potential hazards, such as the use of equipment, inspection procedures, electrical insulation and gas tightness (for pressurised gaseous fuel systems) to conduct risk assessment with appropriate procedures for handling the potential danger arising from vehicle examination
	  ◦ Identify the rescue and remedy procedures to ensure a safe working environment
	• Report the cases of risk assessment and handling procedures to seniors.

Assessment Criteria	The integrated outcome requirements of this unit of competence are that the practitioner being assessed shall prove that he/she is:

	• Capable of applying the regulations and guidelines on environmental protection, road and vehicle safety, and occupational safety and health in relation to vehicle inspection tasks; and • Capable of mastering the risks involved in the operation and correctly handling the potential danger arising from vehicle inspection after a detailed risk assessment; and • Capable of reporting the cases of risk assessment and handling procedure to seniors timely.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge of vehicle servicing. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance • Environmental Protection Ordinance • Gas Safety Ordinance

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Functional Area - Vehicle Inspection and Prosecution

Title	Apply the specialised vehicle inspection facilities and equipment and conduct associated basic maintenance
Code	111648L3
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provisions. Practitioners should be able to safely and correctly apply various specialised vehicle inspection facilities and equipment and conduct the basic maintenance procedure according to the instructions in the user guide provided by the manufacturer of facilities and equipment.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Specialised facilities and equipment for vehicle inspection) • Understand the structure and basic operating principles of the specialised facilities and equipment for statutory vehicle inspection. • Master the function and application of the specialised facilities and equipment, including the care procedures and safety precautions. • Understand the maintenance procedures in the manufacturer's user guide of specialised facilities and equipment. 2. Performance (Apply and maintain the specialised facilities and equipment for vehicle inspection) • Apply specialised facilities and equipment for statutory vehicle inspection according to relevant requirements on environmental protection, occupational safety and health regulations and the instructions in the user guide, including but limited to: ◦ precision electrical and mechanical measuring equipment ◦ side-slip tester, vehicle lifting and supporting gears ◦ exhaust emission testers, such as gas analysers and opacimeters ◦ power dynamometer, tilt table ◦ headlamp aim aligner, photometric meter ◦ gas leakage detector, speedometer tester, roller brake testers and load simulator ◦ other related facilities and equipment • Conduct the basic maintenance procedures of various specialised facilities and equipment for vehicle inspection according to relevant requirements on environmental protection, occupational safety and health regulations and the associated maintenance guide. • Report to seniors for abnormalities in use and performance of specialised facilities and equipment timely.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the functions and applications of various specialised facilities and equipment for vehicle inspection, as well as associated safety precautions;

	• Capable of correctly selecting and safely applying appropriate specialised facilities and equipment for statutory vehicle inspection according to relevant requirements on environmental protection, occupational safety and health regulations and the instructions in the user guide provided by the manufacturer of specialised facilities and equipment; • Capable of conducting the basic maintenance procedures for keeping the normal working condition of the specialized facilities and equipment according to relevant requirements of environmental protection, occupational safety and health regulations and the associated maintenance guide; and • Capable of reporting the abnormalities in use and performance of the specialised facilities and equipment in a timely manner.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed general engineering knowledge.

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Functional Area - Vehicle Inspection and Prosecution

Title	Carry out roadworthiness inspection for vehicles
Code	111654L3
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provision. Practitioners should be able to masterfully inspect the roadworthiness and mechanical fitness of various vehicle types according to the relevant regulations and guidelines.
Level	3
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various vehicle types, and the standard of vehicle examination) • Conversant with the structure and operating principles of various vehicle types, including but not limited to different categories, traditional and new energy power systems, and associated safety precautions. • Master the legislative provisions under the Road Traffic Ordinance of Hong Kong in relation to vehicle inspection and the guidelines in the tester manual to determine if the structure and components can meet statutory requirements, including but not limited to mechanical systems, electrical systems, weight and dimensions. • Understand the relevant legal requirements for road and vehicle safety and environmental protection. 2. Performance (Carry out the roadworthiness inspection of vehicles) • According to the relevant regulations, guidelines in tester manual in tester manual and with reference to the instructions in the vehicle manufacturer's service manual, carry out the roadworthiness inspection visually and use specific equipment to judge the compliance with statutory requirements and roadworthiness of vehicles, identify the defects in: ◦ Powertrain, including power unit, exhaust emissions, transmission system, wheels and tyres ◦ Under-chassis systems, such as steering, brakes, suspension, etc. ◦ Driving controls, including seat belts ◦ Chassis and body structure, including windscreen, window glass and in-cab fittings ◦ Electrical systems, such as lighting, warning and wiper ◦ External energy charging inlet, high-voltage cables and associated system components (for electrified vehicle only) ◦ Pressure vessel, inlet and associated hose/pipe of fuel, including but not limited to hydrogen and liquefied petroleum gas (not applicable to motorcycles) ◦ Fuel cell unit and associated components (for fuel cell electric vehicle only) ◦ Additional electrical and mechanical fittings on board • Report cases of severe deficiencies and the vehicle that cannot meet the specifications to senior.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of describing the structure and operating principles of various vehicle types, including but not limited to different categories, traditional and new energy power systems, and associated safety precautions; • Capable of inspecting vehicles visually and by the measuring results of specific equipment to identify defects; • Capable of judging the roadworthiness and mechanical fitness of various vehicle systems and components accurately according to the standards stipulated in relevant regulations, guidelines in the tester manual and with reference to the instructions of vehicle manufacturer's service manual; and • Capable of reporting cases of severe deficiencies and the vehicles that cannot be used on the road safely to seniors in a timely manner.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge of vehicle servicing. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance • Environmental Protection Ordinance

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Functional Area - Common Competency

Title	Risk of Handling and Storage of High Electric Voltage and Pressurised Gas Vehicles
Code	111658L3
Range	This unit of competencies is applicable to the practitioners of automotive industry such as automotive technicians, mechanics, parts and vehicle storage technicians and the practitioners who are required to perform tasks in environments where these vehicles are present, identify, assess, and control risks associated with working on and storing vehicles with high-voltage (HV) electrical systems (e.g., Battery Electric Vehicles - BEVs, Hybrid Electric Vehicles - HEVs) and vehicles with pressurised gas systems (e.g., Hydrogen Fuel Cell Vehicles - FCEVs, CNG/LPG vehicles).
Level	3
Credit	4 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Performance Requirement
	2. Knowledge (systematic risk management principles to ensure personal safety, the safety of others, and the protection of the vehicle and workshop infrastructure.)
	• Master the Fundamentals of HV Systems: Principles of DC and AC high-voltage circuits (tpically 60V to 800V+); concept of "Voltage, Current, Resistance"; energy storage in lithium-ion batteries, such as Lithium Nickel Manganese Cobalt Oxide (NMC), Lithium Iron Phosphate (LFP), Lithium Nickel Cobalt Aluminium Oxide (NCA) and the 2nd generation EV batteries such as Solid-State Batteries, Sodium-Ion (Na-ion), Lithium-Sulfur (Li-S).
	• Master the Fundamentals of Pressurised Gas Systems: Properties of common automotive gases (Hydrogen, CNG, LPG); concepts of pressure (e.g., bar, psi), gas flammability limits, and embrittlement.
	• Understanding hazard Identification: Knowledge of specific hazards: Electric Shock (AC/DC), Arc Flash, Thermal Runaway (in HV batteries), Fire, Explosion, Asphyxiation, and high-pressure jet releases.
	• Master the Vehicle Technology: Ability to identify different types of electrified and alternative fuel vehicles and their basic system architecture such as the hydrogen internal combustion engine vehicle, the alternative fuel (methanol) engine.
	• Master the Safety Procedures & Standards: In-depth knowledge of:
	  ◦ Manufacturer-specific shutdown and isolation procedures.
	  ◦ Use and interpretation of HV warning labels and service plugs/disconnects.
	  ◦ Procedures for safe handling of damaged vehicles.
	  ◦ Relevant Hong Kong legislation, standards, and codes of practice (e.g., EMSD Guidelines, Factories and Industrial Undertakings Ordinance).
	• Master the Emergency Preparedness: Knowledge of first aid for electric shock, firefighting procedures for electrical and gas fires and site-specific emergency response plans.
	• Master the Risk Management Principles: Understanding of the hierarchy of controls (Elimination, Substitution, Engineering, Administrative, PPE).

	3. Performance (Safety Procedures)
	• Master the Technical Skills:
	  ◦ Ability to correctly use a certified digital multimeter or HV tester.
	  ◦ Inspect PPE, such Class 0 electrical insulating gloves correctly.
	  ◦ Ability to locate and interpret vehicle-specific service information.
	• Master the Cognitive Skills:
	  ◦ Problem-solving skills to assess unpredictable situations, such as a damaged vehicle.
	  ◦ Planning and organizing skills to sequence tasks safely.
	  ◦ Ability to conduct a dynamic risk assessment before starting any task.
	• Master the Interpersonal Skills:
	  ◦ Clear communication to warn others of dangers and to report hazards.
	  ◦ Ability to work effectively in a team, including supervising assistants to ensure their safety.
	• Master the Identify Hazards Associated with HV and Pressurised Gas Systems
	  ◦ Correctly identify vehicle types containing high-voltage and pressurised gas systems using manufacturer identification marks, labels, and symbols.
	  ◦ Locate and identify major high-voltage components (e.g., traction battery, power inverter, electric motor, orange cabling).
	  ◦ Locate and identify major pressurised gas system components (e.g., hydrogen storage tanks, CNG/LPG cylinders, pressure regulators, associated piping).
	  ◦ Identify potential ignition sources and flammable environments relevant to pressurised gas systems.
	  ◦ Identify physical and environmental hazards in the work area that could interact with these systems (e.g., water, heat, sharp objects, trip hazards).
	• Able to assess the risks associated with identified hazards
	  ◦ Evaluate the likelihood and potential severity of incidents arising from identified hazards.
	  ◦ Assess the risk of electric shock, arc flash, and thermal runaway from high-voltage systems.
	  ◦ Assess the risk of fire, explosion, and asphyxiation from pressurised gas systems.
	  ◦ Determine the level of risk (e.g., high, medium, low) for different tasks and situations, including post-collision vehicle recovery.
	• Able to contribute to safe storage practices
	  ◦ Park and store HV and pressurised gas vehicles in designated, well-ventilated areas as per workplace policy.
	  ◦ Maintain clear access to emergency equipment and exit routes
	  ◦ Report any identified storage hazards
	• Implement and monitor risk control measures
	  ◦ Follow established workshop procedures for making the vehicle safe (e.g., ignition-off, key-fob storage, disabling HV system as per manufacturer's instructions).
	  ◦ Select, inspect, and correctly use appropriate Personal Protective Equipment (PPE) including Category 0 [1000V] electrical insulating gloves with leather protectors, face shields, and flame-retardant clothing.
	  ◦ Isolate the high-voltage system and verify zero energy state using a certified voltage tester following a safe isolation procedure.
	  ◦ Secure and manage pressurised gas systems, ensuring isolation valves are closed and systems are depressurised where required and safe to do so.
	  ◦ Implement correct procedures for handling a damaged HV battery or pressurised gas cylinder, including containment and isolation of the area.
	  ◦ Correctly position and use safety signage, barriers, and designated work zones.
	  ◦ Follow emergency procedures for incidents

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is capable to respond appropriately to a simulated emergency, and demonstrating knowledge of emergency procedures. • All relevant workplace health and safety regulations.

	• Access to vehicles with live (but made safe for assessment) or simulated HV and pressurised gas systems, appropriate PPE, service manuals, and isolation equipment is required. • Taking effective measures covering hazards, principles, procedures, and legislation. • Identify hazards, assess risks, and propose a safe action plan. • Demonstrates a proactive approach to hazard identification and risk assessment. • Correctly and confidently applies the safe isolation procedure for a high-voltage system • Shows a clear understanding of the severe consequences of failure to follow procedures. • Performs a safe shutdown and isolation procedure on a designated HV vehicle, including the correct use of a voltage tester and PPE. • Conducts a risk assessment for a given scenario (e.g., replacing a component near the HV system, storing a vehicle with a suspected gas leak) and articulate the control measures required.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed basic knowledge on industrial safety regulations and automotive technology.

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Functional Area - Common Competency

Title	Handle typical dangerous chemicals, pollutants and waste
Code	111659L3
Range	This unit of competency is applicable to vehicle service workshops, testing sites, car care shops, and parts warehouses. Practitioners should be able to handle the dangerous chemicals, pollutants and waste appropriately according to the organisation's established procedure and environmental protection guidelines.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Dangerous chemicals, pollutants and waste) • Be familiar with the typical dangerous chemicals in the automotive industry, their labelling system and characteristics. • Understand the meaning of the typical dangerous chemicals in the Safety Data Sheet (SDS). • Be familiar with the potential hazard and polluting nature of typical dangerous chemicals and pollutants. • Good understanding of the potential health problems of typical pollutants in the automotive industry. • Good understanding of the definition of waste. • Based on the organisational guidelines and rules, practitioners should understand the responsibilities and requirements of employers and employees under the Occupational Safety and Health Ordinance, and the technical requirements in relation to one's capacity under the Dangerous Goods Ordinance, the Factories and Industrial Undertakings (Dangerous Substances) Regulations and the Waste Disposal Ordinance.

	2. Performance (Correctly handle typical dangerous chemicals, pollutants and waste) • According to the established definition of categorisation by organisation, identify typical dangerous chemicals, pollutants and waste; also understand their potential risks. • Be familiar with typical dangerous chemicals such as gaseous and liquid fuels, pressurised gases, waste lubricating oil, absorbents, the cleaning rags and sand stained with lubricating oil, spent refrigerants, organic solvents and their containers, waste paints and their containers, oil filters stained with lubricating oil, waste batteries, engine coolants, brake linings with asbestos content, etc. • Master the specific requirements on the storage quantity, storage methods, storage locations, utilisation level and place of utilisation of the typical dangerous chemicals. • Evaluate personal capability in handling dangerous chemicals, pollutants and waste, such as respective knowledge, experience, protective equipment, manpower requirements, emergency and contingency measures, as well as first-aid knowledge. • Be familiar with the application of different personal protective equipment and select appropriate equipment according to different circumstances. • Under the circumstances of definite safe and abundant resources, safely handle dangerous chemicals, pollutants and hazardous waste, including storage, delivery, utilisation, recovery and disposal of them according to organisational guidelines. • Be familiar with established measures in handling accidents, emergencies and contingencies and be equipped with basic first-aid knowledge; and be capable of implementing them at an appropriate time. • Identify the proper handling procedures in storage, utilisation, disposal and delivery of typical dangerous chemicals and pollutants in accordance with the environmental protection requirements. • Comply with the handling procedure for recovery, temporary storage and disposal of all wastes in accordance with the environmental protection requirements.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of identifying typical dangerous chemicals, pollutants and waste; and capable of understanding the Safety Data Sheet (SDS) of the chemicals; • To the extent that safe and adequate resources are guaranteed, capable of selecting appropriate protective equipment to handle the dangerous chemicals, pollutants and hazardous waste safely according to organisational guidelines; • Capable of handling all wastes in accordance with the procedure and the requirements of environmental protection; • Capable of being familiar with the knowledge of handling accidents and basic first-aid procedure, implementing emergency and contingency measures; and • Capable of understanding the responsibilities and requirements of employers and employees under the Occupational Safety and Health Ordinance, and the technical requirements under the Dangerous Goods Ordinance, the Factories and Industrial Undertakings (Dangerous Substances) Regulations and the Waste Disposal Ordinance.
Remark	The credit value of this unit of competency is established on the presumption that the practitioner being assessed has already possessed the capability to identify typical dangerous chemicals in the automotive industry and be familiar with relevant requirements on environmental protection. The major relevant legislation/rule involved in this unit of competency is as follows: • Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C). • (This UoC replaced 108803L3)

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Functional Area - Common Competency

Title	Attend to Customers
Code	111660L3
Range	This unit of competency is applicable in vehicle showrooms / exhibition venues or service centres. Practitioners should be able to employ professional skills to receive customers according to the organisation's established procedure and standard and can understand customers' requirements to give appropriate response.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Trade knowledge and communication skills)
	• Master comprehensive knowledge of customer care, including:
	  ○ the code of practice of the organisation in customer service;
	  ○ the system and customer attention defined by the organisation in trade knowledge, appearance and customer service; and
	  ○ oral communication and interpersonal skills.
	• Good understanding of customers' preference and demand for vehicle products, including:
	  ○ consumer psychology;
	  ○ the characteristics of different types of customers; and
	  ○ the customers' needs for the environmental protection products, such as new energy vehicles.
	2. Performance (Attend to customers)
	• Manage personal appearance meeting the organisation's established requirements.
	• Serve customers according to the organisation's established procedure:
	  ○ Respond to customer enquiries on vehicle service and products with courtesy and professionalism
	  ○ Maintain relationship with customers and collect their contact information according to the organisation's established procedure, and report to the supervisor
	  ○ Follow up with respective parties to obtain the latest and accurate information, such as the product knowledge, such as performance and safety, progress of service, etc.
	• Employ good communication skills with customers.
	• Receive customers with a proper customer service attitude, such as providing services in a friendly manner to give customers a good impression, updates of service and adequate product knowledge.
	• Bear the corporate image when receiving customers.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding customers' needs for giving appropriate responses and taking follow-up actions; and

	• Capable of employing effective communication skills to receive customers according to the organisation's procedure and requirements and with the bearing of a corporate image.
Remark	The credit value of this competency unit assumes that the practitioner has already possessed comprehensive knowledge of automobile products, information technology skills and interpersonal communication skills, and understanding on the organisational code of practice and consumer psychology. (This UoC replaced 108793L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct maintenance and inspection of low-voltage electrical systems on electrified vehicles
Code	111698L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to execute the maintenance and inspection of the low-voltage electrical system work on electrified vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct functionality tests on the systems/components and provide written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Hazard associated with electrified vehicles) • Accurately differentiate the voltage levels amongst the components and cables of various electrified vehicle systems, such as the rechargeable energy storage system, powertrain, air conditioning, steering, cooling, suspension, and braking systems, etc. • Master the functions and applications of various special tools and equipment for maintaining the low-voltage electrical operating systems of electrified vehicles. • According to the instructions in the corresponding vehicle manufacturer's service manual, identify the risks and hazards associated with electrified vehicles, including fuel cell electric, electric and hybrid electric vehicles, the potential hazards of various low-voltage electrical systems, and associated preventive and protective measures. • Conversant with the inspection and maintenance procedures for low-voltage operating electrical systems • Master of the relevant legal requirements on road and vehicle safety, and environmental protection. 2. Performance (Process the low-voltage system maintenance and inspection-related work on electrified vehicles) • According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely process the low-voltage system maintenance and inspection-related work on electrified vehicles, including: ◦ Identify the potential risks and hazards of the systems/components concerned ◦ Work on the systems/components in accordance with the relevant preventive measures • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is: • Capable of executing maintenance and inspection work on low-voltage electrical systems/components on electrified vehicles safely according to the instructions in the corresponding electrified vehicle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of conducting functionality tests safely on low-voltage electrical systems/components, and providing working report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the assessee concerned has already possessed good knowledge of the structure and operation of electrified vehicles. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The servicing process should be under the high-voltage system power-down condition and is confirmed by the checking result of special service tools/authorised competent person. (This UoC replaced 108688L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair mechanical breakdown and damage on electrified vehicles
Code	111699L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to carry out mechanical breakdown and damage on electrified vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on road and vehicle safety, environment, occupational safety and health regulations. They should also be able to handle potential hazards and conduct basic tests on components, and provide written report upon completion of work.
Level	3
Credit	5 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Hazards with mechanical breakdown and damage on electrified vehicles, including fuel cell electric, electric and hybrid electric vehicles, and associated preventive measures) • According to the instructions in the corresponding vehicle manufacturer's service manual, identify the potential risks and hazards associated with mechanical breakdown and damage for the electrified vehicle, such as imperfection or loosening cable harness, damaged hardware, low efficiency or inoperative cooling system, etc. • Familiar with preventive measures associated with the potential risks and hazards. • Master the use of special service tools, personal protection and first-aid equipment for relevant tasks. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection. 2. Performance (Repair of mechanical breakdown and damage on electrified vehicle, including but not limited to the power transmission, bodywork and chassis systems) • According to the instructions in the corresponding vehicle manufacturer's servicing manual and the requirements of occupational safety and health as well as that of environmental protection, safely process the checking and repairing of mechanical breakdown and damage of electrified vehicles, including but not limited to: ◦ Collect the associated service information for identifying related potential risks and hazards ◦ Check and rectify the failure items, such as the cable harness, hardware, cooling system, etc., on the basis of preventive measures • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measurement data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of working on the repair of mechanical breakdowns and damage to electrified vehicles, including fuel cell electric, electric and hybrid electric vehicles, safely according to the instructions in

	the corresponding vehicle manufacturer's service manual and the relevant requirements on road and vehicle safety, environmental protection, occupational safety and health regulations, after the system power-down is confirmed by the checking result of special service tools/authorised competent person; and • Capable of conducting basic tests on components and providing written report upon completion of repair.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of the construction and operation of electrified vehicles. The practitioner concerned should be a recognised competent person in electric-drive vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The servicing process should be under the high-voltage system power-down condition and is confirmed by the checking result of special service tools/authorised competent person. (This UoC replaced 108689L2)

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Isolation and reinstatement of the high-voltage electrical system of electrified vehicles
Code	111700L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to isolate and reinstate the high-voltage electrical system of electrified vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to handle potential hazards, conduct basic tests on the systems and provide work report upon completion of work.
Level	3
Credit	4 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Isolation and reinstatement of the high-voltage electrical system of electrified vehicles, including battery electric motorcycles, fuel cell electric vehicles, battery electric vehicles and hybrid electric vehicles)
	• Identify the high-voltage electrical systems and components of electrified vehicles and their locations, such as:
	  ◦ High-voltage cables
	  ◦ High-voltage battery pack
	  ◦ Electric power modulation and control modules
	  ◦ Electric Motors
	  ◦ Charging inlets
	• Master the use of personal protection and first-aid equipment for conducting high-voltage system isolation/reinstatement processes.
	• Master the isolation and reinstatement procedures for the high-voltage system of electrified vehicles according to the instructions in the corresponding vehicle manufacturer's service manual.
	• Master the use of testing equipment for identifying the electric charge and insulation of high-voltage components.
	• Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection.

	2. Performance (Perform the isolation and reinstatement procedures for the high-voltage electrical system of electrified vehicles) • According to the maintenance requirements of manufacturers, inspect the serviceability of personal protection and first-aid equipment periodically. • According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, with the application of proper personal protection equipment and special service tools, safely process isolation and reinstatement for the high-voltage electrical system of an electrified vehicle, including: ◦ Identify the exact location of the high-voltage electrical system isolation/reinstatement component ◦ Check the intactness of the isolation/reinstatement component by visual inspection ◦ Perform the high-voltage system isolation/reinstatement correctly • Determine the effectiveness of isolation/reinstatement processes after work and provide work report focusing on the abnormalities and corresponding actions taken.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking the intactness of high-voltage connectors and cables linked among high-voltage systems/components; • Capable of isolating and reinstating the high-voltage electrical system of electrified vehicles safely according to the instructions in the electrified vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of determining the effectiveness of isolation/reinstatement processes on the high-voltage system and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the construction and operation of electrified vehicles. The practitioner concerned should be a recognised competent person in electric-drive vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance (This UoC replaced 108690L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Dismantle, repair and assemble the traction motors of electrified vehicles
Code	111701L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to dismantle, repair and assemble the traction motors and associated components safely according to the instructions in the corresponding electrified vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct functional tests on the traction motor and provide work report upon completion of work.
Level	3
Credit	4 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The traction motor and associated components) • Understand the structure and operation of the traction motors and associated components of electrified vehicles. • Demonstrate the dismantlement, repair and assembly procedure according to the instructions in the corresponding vehicle manufacturer's service manual. • Familiar with the special servicing tools and equipment for dismantling, repairing and assembling the traction motors and associated components. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection. 2. Performance (Dismantle, repair and assemble the traction motors and associated components of electrified vehicles) • According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, dismantle, repair and assemble the traction motors and associated components of electrified vehicles safely, including: ◦ Identify the common faults of the removed traction motor and associated components by special servicing tools and equipment and visual inspection ◦ Analyse the testing results for locating faults ◦ Rectify the typical component faults ◦ Replace the lubricant of the correct type and quantity ◦ Install the bolts and nuts with correct tightening torque and sequence ◦ Conduct functional tests for the traction motor and components after assembly • Conduct performance and safety inspection after the assembly work and provide work report focusing on: ◦ Abnormalities ◦ Measurement data ◦ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting dismantling, repairing and assembling the traction motors and associated components of electrified vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations, after the system power-down is confirmed by the checking result of special service tools / authorised competent person; and • Capable of conducting functional tests for the traction motor and components and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of the structure and operation of electrified vehicles. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance (This UoC replaced108692L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair the air-conditioning, cooling and power steering systems of electrified vehicles
Code	111702L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to dismantle, check and repair the air conditioning, cooling and power steering systems of fuel cell electric, battery electric and hybrid electric vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct basic tests on the associated systems and components and provide work report upon completion of work.
Level	3
Credit	8 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (air-conditioning, cooling and power steering systems of fuel cell electric, battery electric and hybrid electric vehicles) • Describe the structure and operation of the air conditioning, cooling and power steering systems equipped on fuel cell electric, battery electric and hybrid electric vehicles. • Apply the proper dismantling procedures of the air-conditioning, cooling and power steering systems according to the instructions in the corresponding vehicle manufacturer's service manual. • Understand the check and repair procedure according to the instructions in the corresponding vehicle manufacturer's service manual, such as the cooling system bleeding process, use of the correct air-conditioning compressor lubricant, etc. • Properly use the special tools and equipment to dismantle, check and repair the air-conditioning, cooling and power steering systems. • Understand the relevant legal requirements on road and vehicle safety, and environmental protection. 2. Performance (Dismantle, check and repair the air-conditioning, cooling and power steering systems of fuel cell electric, battery electric and hybrid electric vehicles) • According to the instructions in the corresponding vehicle manufacturer's servicing manual and the requirements of occupational safety and health as well as that of environmental protection, dismantle, check and repair the air-conditioning, cooling and power steering systems of fuel cell electric, battery electric and hybrid electric vehicles safely, including: ◦ Identify the common faults of the components by visual inspection ◦ Test and assess the operation and effectiveness of the components. ◦ Rectify typical system and component faults • Conduct performance and safety inspection after the work and provide work report focusing on: ◦ Abnormalities ◦ Measurement data ◦ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of dismantling and repairing the air-conditioning, cooling and power steering systems of the fuel cell electric, battery electric and hybrid electric vehicles safely according to the instructions in the corresponding vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations, after the system power-down is confirmed by the checking result of special service tools/authorised competent person; • Capable of conducting the checking procedures of the air-conditioning, cooling and power steering systems of the fuel cell electric, electric and hybrid electric vehicles safely according to the instructions in the corresponding vehicle manufacturer's servicing manual and the relevant requirements of environmental protection, occupational safety and health regulations; and • Capable of conducting basic tests on the associated systems and components and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the operation of electrified vehicles. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The servicing process should be under the high-voltage system power-down condition and is confirmed by the checking result of special service tools/authorised competent person. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance (This UoC replaced 108693L2)

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Removal and replacement of the traction motor and associated components of electrified vehicles
Code	111703L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to remove and replace the traction motors and associated components safely according to the instructions in the corresponding electrified vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct performance tests on the motor assembly and provide work report upon completion of work.
Level	3
Credit	4 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The traction motor and associated components) • Understand the structure and operation of the traction motors and associated components of electrified vehicles. • Demonstrate the removal and replacement procedures of the traction motor assembly and associated components according to the instructions in the corresponding vehicle manufacturer's service manual. • Familiar with the special servicing tools and equipment for removing and replacing the traction motors and associated components. • Demonstrate the coding and performance test procedures of the traction motor. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection. 2. Performance (Removal and replacement of traction motors and associated components of electrified vehicles, and the subsequent performance tests) • According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, remove and replace the traction motors and associated components of electrified vehicles safely, including: ◦ Identify the intactness and connections of coolant hoses, cables and signal lines of the traction motor and associated components ◦ Remove and replace the traction motor and associated components properly and safely ◦ Conduct functional tests for the traction motor and associated components after replacement • Conduct coding procedure, performance and safety inspection after the replacement work and provide work report focusing on: ◦ Abnormalities ◦ Measurement data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of removing and replacing the traction motors and associated components, including wiring of electrified vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations, after the system power-down is confirmed by the checking result of special service tools / authorised competent person; and • Capable of conducting functional tests for the traction motor and associated components and the coding procedure for the traction motor, and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of the structure and operation of electrified vehicles. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The servicing process should be under the high-voltage system power-down condition and is confirmed by the checking result of special service tools / authorised competent person. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis and repair on the low-voltage battery, charging and starting systems of combustion engine vehicles
Code	111704L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to check the condition of the low-voltage vehicle battery, conduct diagnoses on vehicle charging and starting systems and repair associated faults according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct system tests and evaluations, and provide work report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of low-voltage vehicle battery, charging and starting systems) • Good understanding of the structure and operating principles of battery, charging and starting systems. • Good understanding of electrical and electronic theories and also the principles of electric power transfer and electric power generation. • Good understanding of general electrical/electronic tools and instruments. • Good understanding of the handling procedure for low-voltage vehicle batteries, their possible impact and danger on occupational safety and health as well as environmental protection. • Master the inspection and maintenance procedures for low-voltage vehicle battery, charging and starting systems according to the requirements stated in the vehicle manufacturer's servicing manual. 2. Performance (Conduct fault diagnosis and repair on low-voltage vehicle battery, charging and starting systems) • Independently check and repair the faults found in the vehicle battery, charging and starting systems according to the information in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as environmental protection. • Select appropriate tools and instruments to accurately inspect and measure the vehicle battery, charging and starting systems; analyse and evaluate the faults found in the systems according to the relevant data. • Subject to different faults, conduct checking and repairing work, including dismantling, replacing, reassembling and fine-tuning relevant system components and accessories. • Accurately assess the efficiency of relevant systems upon completion of the checking and repairing work and conduct appropriate follow-up action. • Compare the efficiencies of the low-voltage vehicle battery, charging systems and starting systems upon completion of rectification with the data stated in the vehicle manufacturer's service manual. • Provide work report after confirming that rectification is done.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of masterfully conducting fault diagnosis on vehicle battery, charging and starting systems according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of conducting or arranging rectification work for relevant systems according to diagnostic results; • Capable of conducting tests of components for comparing with specific specifications upon the completion of rectification; and • Capable of conducting system tests and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses a good knowledge of vehicle electrical system servicing. (This UoC replaced108703L3)

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Unit of Competency

Functional Area - Vehicle Servicing

Title	Maintain and repair the non-live electrified vehicle systems
Code	111705L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to maintain and repair the non-live electrified vehicle systems safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct basic tests on components, and provide work report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (The electrical systems of electrified vehicle)
	• Understand the electrical systems and components of electrified vehicles, such as:
	  ○ Rechargeable energy storage system and components
	  ○ Electric power control and modulation system
	  ○ Meter console
	  ○ Drive units
	  ○ Onboard charging unit
	  ○ Fuel cell unit, its control and associated components (For fuel cell electric vehicles only)
	  ○ Hydrogen charging and storage system (For fuel cell electric vehicles only)
	• Good understanding of the application and function of special service tool and equipment for electrical systems.
	• Good understanding of the maintenance and repair procedures according to the instructions in the corresponding vehicle manufacturer's service manual.
	• Understanding of the relevant legal requirements on road and vehicle safety and environmental protection.

	2. Performance (Maintenance and repair of the non-live electrified vehicle systems) • According to the instructions in the corresponding vehicle manufacturer's servicing manual and the requirements of occupational safety and health as well as that of environmental protection, safely process maintain and repair on the non-live electrified vehicle systems, including: ◦ Apply the appropriate tools and equipment for work ◦ Identify the common faults in the components by visual inspection and special service tools and equipment ◦ Test and assess the operation and effectiveness of the components. ◦ Rectify typical system faults ◦ Renew the faulty components and reinstall the rectified components • Conduct performance and safety inspection after the work and provide work report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of safely conducting maintenance and repair on the non-live electrified vehicle systems, the fuel cell and hydrogen storage system (for fuel cell electric vehicles only), according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of conducting basic tests on the systems and components, and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the operation, working principles and maintenance of electrified vehicles. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent; and be a competent person in hydrogen fuel cell electric vehicles recognised by the authority concerned (for fuel cell electric vehicle service only). The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Gas Safety Ordinance • Occupational Safety and Health Ordinance (This UoC replaced 108691L2)

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Removal, checking and replacement of the rechargeable energy storage system, charging and propulsion system of an electric motorcycle
Code	111706L3
Range	This unit of competency is applicable in motorcycle service workshops. Practitioners should be able to remove, check and replace the rechargeable energy storage system (REESS), onboard charger, propulsion system and associated components with the application of suitable gear safely, according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct basic functionality tests on the system and provide work report upon completion of work.
Level	3
Credit	4 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of the high-voltage operating systems on various types of electric motorcycles) • Good understanding of the structure and operation of the REESS, onboard charging system, propulsion system and associated components of electric motorcycles, including external electricity charging control, high-voltage battery and its management system, electric power control and modulation units, meter and control consoles, traction motors, driving mechanisms, etc. • Master the principles of electric power charging, storage and management, high-voltage power control and modulation for the traction system, including the communication amongst control modules and various signals, such as the input, feedback and output. • Differentiation of the voltage levels of various electrical systems of electric motorcycles. • Master the function and application of personal protection equipment (PPE), service tools and equipment for electric motorcycle servicing. • Master the principle of high-voltage system power down to isolate the electrical circuit connection between the high-voltage battery pack and the vehicle system components, as well as the criteria for power reinstatement. • Demonstrate the removal, checking and replacement procedures of the REESS, onboard charging system and propulsion system, including but not limited to the high-voltage battery, electric power control and modulation units, traction motor and driving mechanism. • Demonstrate the coding and functionality testing procedures. • Understanding of the relevant legal requirements regarding road and vehicle safety, and environmental protection.

	2. Performance (Checking, rectification and replacement of the REESS, onboard charging and propulsion system of an electric motorcycle)
	• Correctly select and apply the PPE, service tools and equipment for electric motorcycle servicing.
	• Correctly identify the voltage levels of the component / cable / wiring harness of various electrical systems.
	• According to the instructions in the corresponding vehicle manufacturer's service manual and associated safety guidelines, with the application of proper personal protective equipment and special service tools, safely execute the correct power-down and reinstatement procedures for the high-voltage electrical system of an electric motorcycle equipped either type of battery pack, including the identification of the correct location of the breaker and intact components.
	• According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely process the checking, rectification and replacement of the fixed-type high-voltage battery pack and its management system, onboard charging system, propulsion system and associated components of electric motorcycles, including but not limited to the intactness of cable wires, serviceability of the high-voltage battery pack, onboard charger, electric power control and modulation units, traction motor and driving mechanism.
	• Renew and reinstall the rectified components, and conduct the coding procedures where necessary.
	• Conduct the basic functionality test and safety inspection after completion of work and provide work report focusing on:
	  ◦ Abnormalities
	  ◦ Measured data
	  ◦ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of explaining the logic of electric power charging control, traction power control and modulation, including various control signals, of an electric motorcycle; • Capable of identifying the voltage levels of the power system on electric motorcycles and applying suitable PPE and service tools for the removal and replacement procedures of the propulsion system and components; • Capable of conducting rectification, replacement and testing of the high-voltage electrical systems of electric motorcycles, including but not limited to high-voltage battery packs (fixed type), onboard charging and propulsion systems, according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations, after system power-down is confirmed by the checking result of special service tools / authorised competent person; and • Capable of conducting basic functionality tests for the REESS, onboard charging system, propulsion system and associated components, and the coding procedures for the traction motor and fixed-type high-voltage battery pack, and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the operation, working principles and maintenance of electrified vehicles. The practitioner concerned should be a recognised competent person in electrified vehicle servicing, such as a registered vehicle mechanic who has completed an electric motorcycle training course, or equivalent. The major ordinances involved in this unit of competency are as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Examine the roadworthiness of vehicle with specific equipment
Code	111707L3
Range	This unit of competency is applicable in vehicle service workshops and designated vehicle examination workplaces under legislative provision. Practitioners should be able to inspect vehicle systems and components according to the instructions in vehicle manufacturer's service manual and the stipulated instructions to satisfy the relevant regulations on roadworthiness of vehicles using specific equipment according to relevant user guide. Provide written report for abnormalities after the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Standard of vehicle examination and application of equipment) • Master the legislative provisions under the Road Traffic Ordinance of Hong Kong in relation to vehicle inspection to determine if the structure and components can meet statutory requirements. • Master the procedure for issuing documents in relation to the vehicle examination and the responsibilities involved. • Understand the structure and basic operating principles of specific equipment for vehicle inspection. • Master the application of the specific equipment, including but not limited to roller brake tester, load simulator, sideslip tester, headlamp aim aligner, emission tester, and opacimeter. • Understanding of the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Carry out vehicle examination and related duties) • Perform vehicle examination according to relevant regulations/instructions on vehicle inspection, such as: ◦ Conduct the vehicle examination visually as well as using specific equipment to evaluate if the vehicle components can meet statutory requirements and roadworthiness ◦ Issue and record documents in relation to vehicle inspection, such as certificate of roadworthiness ◦ Report cases of severe deficiency and vehicles that cannot meet the specification. • According to the instructions in vehicle manufacturer's service manual or the user guide provided by the manufacturer of specific equipment for inspection, the requirements of occupational safety and health as well as that of environmental protection, safely apply the specific equipment for inspecting the vehicle systems and components, including but not limited to engine and mechanical components, exhaust emission, brakes, suspension, steering, electrical systems, tires, chassis, and body. • Conduct simple maintenance for testing equipment. • Report faulty testing equipment and improper conditions. • Update vehicle examination standard/specification according to the latest regulations/instructions. • Provide written report for abnormalities after the work.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of applying the specific equipment for the examination safely and correctly to identify the roadworthiness of various vehicle systems and components according to the instructions in vehicle manufacturer's service manual or the user guide of the respective equipment manufacturer; • Capable of conducting vehicle examination according to the instructions and standards stipulated in relevant regulations; and • Capable of issuing documents in relation to vehicle examination according to relevant regulations and providing written report after the work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge of vehicle servicing. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance • Environmental Protection Ordinance • (This UoC replaced 108714L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Carry out routine maintenance for the hydrogen fuel cell system on electrified vehicle
Code	111708L3
Range	This unit of competency is applicable in the hydrogen-fuelled vehicle service workshops. Practitioners should be able to carry out routine maintenance safely according to the instructions in the respective vehicle manufacturer's service manual and the relevant requirements on gas safety, environmental protection, occupational safety and health regulations. They should also be able to conduct functional and safety tests on the system according to the manufacturer's specification, and provide work report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Principle and layout arrangement of vehicular hydrogen fuel cell system, and the routine maintenance procedures) • Master the safety precautions and emergency procedures on the hydrogen fuel cell system and know the quality standard of hydrogen required for vehicular fuel cell systems. • Understand the basic principle and operation of the hydrogen fuel cell system adopted on vehicle. • Master the general layout of the fuel cell system on board, the function and operating principles of respective system components comprising, but not limited to, gas leakage detectors, gas tanks including all safety and control components attached, fuel cell units, hydrogen feeding pressure control, humidifiers, recirculating pumps, air pumps, coolers, back pressure valves and purge valves. • In accordance with the respective vehicle manufacturer's service manual, master the procedures to carry out routine system maintenance, including system management and gas leakage detection, such as functional tests, gas leakage tests, coolant leakage tests, system entirety, etc. • Understand the tools and equipment to carry out the fuel cell system routine maintenance. • Understand the relevant legal requirements on gas safety, road and vehicle safety, and environmental protection.

	2. Performance (Carry out routine maintenance for the hydrogen fuel cell system)
	• In accordance with the respective vehicle manufacturer's service manual, the Hong Kong Road Traffic Ordinance, requirements of gas safety, occupational safety and health, and environmental protection, carry out the routine maintenance of the fuel cell system, such as the normal operation, intactness and gas tightness of:
	  ◦ Onboard gas leakage detection system
	  ◦ Hydrogen fuel inlet coupling and pipeline
	  ◦ Hydrogen tank and associated safety and control components
	  ◦ Fuel cell unit and associated feeding pressure control
	  ◦ Humidifier
	  ◦ Recirculating pump assembly
	  ◦ Air pump assembly
	  ◦ Back pressure valve and purge valve
	  ◦ Cooler
	  ◦ System controls, and etc.
	• Conduct functional and safety inspection after the work and provide work report focusing on the abnormalities and decisions made.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of carrying out routine maintenance for the fuel cell system onboard safely according to the instructions in the respective vehicle manufacturer's service manual and the relevant requirements on gas safety, environmental protection, occupational safety and health regulations; and • Capable of conducting system functional and safety inspections, and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the fuel cell system onboard. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent, and be a competent person in hydrogen fuel cell electric vehicles recognised by the authority concerned; the process should be under the high-voltage system power-down condition and confirmed by the checking result of special service tools/authorised competent person. When a live high-voltage system is involved in the work, the practitioner shall possess recognised competency/qualification, such as an electric vehicle – high voltage training course, or equivalent. The major ordinance involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of Vehicles) Ordinance • Gas Safety Ordinance • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis on the propulsion and power control systems of electric motorcycle
Code	111709L3
Range	This unit of competency is applicable in motorcycle service workshops. Practitioners should be able to masterly conduct fault diagnosis on the propulsion and power control systems of electric motorcycles and arrange rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements of environmental protection, occupational safety and health regulations. They should also be able to conduct system tests and provide written report upon completion of work.
Level	3
Credit	5 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of the propulsion and power control systems on various types of electric motorcycles) • Master the structure and operating principles of the propulsion and associated power controls of various types of electric motorcycles, such as the onboard charger, electric power control and modulation units, traction motors, driving mechanisms, etc. • Good understanding of the hazards and safety rules of electrical drive system servicing on electric motorcycles. • Master the function and application of personal protection equipment (PPE), service tool, various types of diagnostic and testing instruments and equipment, such as on-board diagnostic systems, for electric motorcycle servicing. • Application of fault diagnosis procedure for the abnormal performance of propulsion and control systems of electric motorcycles, including but not limited to onboard charging, electric power control and modulation units, traction motors and driving mechanisms, with reference to instructions in the vehicle manufacturer's service manual. • Understanding of the relevant legal requirements of road and vehicle safety and environmental protection.

	2. Performance (Conduct fault diagnosis on the propulsion and power control systems of electric motorcycles)
	• Correctly select and apply the PPE, special service tools, diagnostic and testing equipment and instruments for conducting electric motorcycle system diagnosis, including road tests.
	• Conduct fault diagnosis on the propulsion and control systems of electric motorcycles according to the instructions in the vehicle manufacturer's service manual and safety rules as well as the requirements of environmental protection, occupational safety and health regulations, including:
	  ◦ Onboard charging system;
	  ◦ Electric power control and modulation systems;
	  ◦ Electric drive unit; and
	  ◦ Driving mechanism.
	• Arrange rectification of defects identified from diagnosis.
	• Conduct performance and safety inspection after the rectification or replacement work and provide written report focusing on:
	  ◦ Abnormalities
	  ◦ Measurement data
	  ◦ Major decisions and the effectiveness

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of accurately conducting fault diagnosis on the onboard charging, propulsion and power control systems of electric motorcycles, such as defective or deficient charging power, abnormal operating noise and vibration, jerky acceleration, inoperative propulsion control, traction power and driving range deficiencies, etc., according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of arranging rectification of defects according to diagnostic results; and • Capable of conducting performance and safety tests on the electric motorcycle accurately upon completion of the rectification or replacement work and providing written report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of repairing and diagnosing various types of electric motorcycles. The practitioner concerned should be a recognised competent person in electrified vehicle servicing, such as a registered vehicle mechanic who has completed an electric motorcycle training course, or equivalent. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis on various liquefied petroleum gas supply and control systems of vehicles
Code	111710L3
Range	This unit of competency is applicable in liquefied petroleum gas vehicle service workshops. Practitioners should be able to masterly conduct complicated fault diagnosis on various liquefied petroleum gas supply and control systems and conduct rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct system tests and complete simple fault report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various liquefied petroleum gas (LPG) systems on vehicles) • Comprehend the nature, characteristics, handling and safety precautions of fuel used on LPG vehicles. • Good understanding of the structure and operating principles of various LPG supply and control systems, their sensors and actuators. • With reference to the corresponding vehicle manufacturer's service instructions, understand the fault diagnosis procedures for various fuel supply and control systems, such as using on-board diagnostic tester, exhaust gas analysers, etc., to diagnose system fault. • Master fuel system diagnosis and the operation of testing equipment and instruments, such as gas leakage testers, various types of on-board diagnostic systems, etc. • Good understanding of relevant laws and regulations governing vehicle exhaust emissions. • Good understanding of relevant laws and regulations governing the handling of vehicle LPG, and relevant legal requirements on road and vehicle safety and environmental protection.

	2. Performance (Conduct fault diagnosis on LPG systems on vehicles)
	• Accurately conduct complicated fault diagnosis on various LPG supply and control systems on vehicles according to the instructions in the vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection, including the use of special equipment and instruments to ensure gas-tightness of the system and assist diagnosis.
	• Conduct or arrange rectification to eliminate the fault according to diagnostic results.
	• Accurately test the fuel systems, including using relevant equipment and instruments to conduct the tests.
	• Conduct performance and safety inspection after the work and provide simple fault report focusing on:
	  ◦ Abnormalities
	  ◦ Measured data
	  ◦ Major decisions
	• Evaluate whether vehicle emissions comply with the local statutory requirements based on measurement results.
	• Safely handle liquefied gas system components according to relevant local statutory requirements.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of accurately conducting fault diagnosis on various LPG supply and control systems of vehicles, including complicated faults that may lead to rough engine running, degraded power output, emission problems, incorrect fuel injection timing, pressure and metering quantity, etc., with reference to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of conducting rectification according to diagnostic results; • Capable of assessing vehicle emissions correctly according to relevant laws and regulations on vehicle emissions; • Capable of maintaining LPG system components and handling liquefied petroleum gas correctly according to relevant laws and regulations; and • Capable of conducting fuel system tests and completing simple fault report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed comprehensive knowledge of inspecting and repairing various types of LPG supply and control systems of vehicles. The practitioner concerned should be a recognised competent person in liquefied petroleum gas vehicles. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational, Health and Safety Ordinance • Gas Safety Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Measure vehicle body/chassis with specialised electronic instruments
Code	111711L3
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to measure vehicle body/chassis and conduct diagnosis on the deformation condition according to the vehicle body servicing manual, equipment user guide and the relevant requirements on environment, occupational safety and health regulations. Providing written report after the work.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Structure of various types of vehicle body and the operating principles of electronic measuring instruments)
	• Understand various types of chassis and the structure of unitary chassis.
	• Understand the operating principle of vehicle body electronic instruments
	  ◦ Data Liner
	  ◦ Car-O Liner.
	• Understand the impact of crushing on the structure of vehicle body.
	2. Performance (Measure vehicle body/chassis with electronic instruments)
	• Calibrate instruments.
	• Measure vehicle body with specialised instruments according to the vehicle body servicing manual, equipment user guide and the relevant requirements on environment, occupational safety and health regulations.
	• Record measurement data and conduct diagnosis on deformation condition.
	• Provide written report focusing on:
	  ◦ Abnormalities
	  ◦ Measure data
	  ◦ Major decision

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of masterly measuring and conducting diagnosis on the deformation of vehicle body structure according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of recording measurement data and providing written report.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle body servicing and measurement. (This UoC replaced 108709L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Rectify large-scale structural damages
Code	111712L3
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able of correctly diagnose and rectifying large-scale structural damages according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. Providing written report after the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structural damage of vehicle body and rectification systems) • Be familiar with the impact of crushing to the structure of vehicle body. • Be familiar with the structure of rectification systems, names of accessories and the operating method. • Understanding the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Conduct diagnosis and rectification on structural damages of vehicle body) • Conduct diagnosis on the structure of vehicle body by visual inspection and the measurement data of vehicle body. • Replace the structural parts according to the instructions in the vehicle. manufacturer's servicing manual • Rectify damaged structural parts by conducting cutting and welding procedure according to the instructions in the vehicle manufacturer's servicing manual and the working instructions of vehicle body rectification systems. • Conduct rectification procedure by using vehicle body rectification systems according to the vehicle manufacturer's servicing manual and provide written report focusing on: ◦ Abnormalities ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of masterly conducting diagnosis on the damages of vehicle body structure according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of masterly conducting vehicle body rectification procedure according to the instructions in the vehicle manufacturer's user guide/servicing manual. • Capable of providing written reports after the work
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle body servicing, welding and know how to use vehicle body rectification instruments.

	(This UoC replaced 108710L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair aluminium alloy vehicle body
Code	111713L3
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be able to safely check and repair aluminium alloy vehicle body according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct basic test of components upon completion of work. Providing written report after the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Repairing of aluminium alloy vehicle body) • Be familiar with the characteristics of aluminium alloy suitable to be used as the material for vehicle body, including its comparison with steel and the damages of iron elements to aluminium alloy. • Be familiar with various kinds of methods to join aluminium alloy panels and the materials and tools required. • Understand the categories, specification and standard of aluminium alloy welding rods and wires commonly used in MIG/TIG welding. • Understand the working procedure for aluminium alloy. • Understanding the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Check and repair aluminium alloy vehicle body) • Repair aluminium alloy vehicle body according to the instructions in the vehicle manufacturer's servicing manual, the requirements of occupational safety and health and environmental protection as well as the Code of Practice for Safety and Health at Work for Manual Electric Arc Welding, including: ◦ Use adhesives ◦ Use rivets ◦ Welding ◦ Use correct tools to cut and grind. • Conduct visual inspection and dimensional check on vehicle body and the surface of welding seams according to the specification provided by vehicle manufacturer and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competence are that the practitioner being assessed shall prove that he/she is:

	• Capable of safely checking and repairing aluminium alloy vehicle body panels according to the instructions in the vehicle manufacturer's servicing manual, the relevant requirements on environment, occupational safety and health regulations and the Code of Practice for Safety and Health at Work for Manual Electric Arc Welding; and selecting the materials and tools required for repair work; and • Capable of conducting visual inspection and dimensional check on vehicle body panels and the surface of welding seams according to the specification provided by vehicle manufacturer and providing written report after the work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of MIG/TIG and vehicle body structure. (This UoC replaced 108711L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the techniques of blending
Code	111714L3
Range	This unit of competency is applicable in vehicle body painting workshops. Practitioners should be masterly able of conduct colour mixing, matching and blending according to working instructions and the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. Providing written report after the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Colour mixing, painting materials and spraying guns) • Understand basic colour theory and the principle of colour mixing. • Understand the user instructions / data sheet of painting materials. • Be familiar with the characteristics and operating principles of various kinds of spraying guns. • Be familiar with the difference between the techniques of blending paint and ordinary spray painting. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Carry out the work of colour mixing, colour matching and blending paint) • Carry out the work of colour mixing and colour matching according to the instructions in the vehicle manufacturer's manual and the relevant requirements on environment, occupational safety and health regulations, such as: ◦ Paint mixing ◦ Spray testing and colour checking ◦ Tinting adjustment ◦ Colour matching ◦ Spray gun adjustment ◦ Adjust air pressure to control the colour • Apply blending paint technique to the work piece. • Check the working procedure to ensure that the requirements of the factory are met. • Provide written report focusing on: ◦ Abnormalities ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of accurately conducting the procedure for paint mixing according to the painting formula provided by the vehicle manufacturer and the colour of the vehicle; • Capable of correctly adjusting the spraying gun to conduct blending paint according to working instructions or the instructions in the vehicle manufacturer's servicing manual and the relevant

	requirements on environment, occupational safety and health regulations; and • Capable of conducting inspection to ensure that the requirements of the factory are met according to working instructions or the instructions in the vehicle manufacturer's servicing manual and providing written report after the work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the capability to handle the painting process and safely operate general painting tools and instruments. (This UoC replaced 108712L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Remedy paint defects (spot painting)
Code	111715L3
Range	This unit of competency is applicable in vehicle body painting workshop. Practitioners should be able of remedy paint defects applicable to spot painting independently and the relevant requirements on environment, occupational safety and health regulations. Providing written report after the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Painting defects) • Be familiar with the causes, preventive measures and solutions for painting defects. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. 2. Performance (Apply spot painting technique for remedial work) • With compliance to the relevant requirements on environment, occupational safety and health regulations carry out procedures to remedy painting defects including the following: ◦ Handle old top coating ◦ Select suitable painting materials ◦ Mix and blend the paint and conduct colour matching ◦ Carry out spot painting process. • Inspect the working procedure to ensure that the requirements of the factory are met. • Provide written report focusing on: ◦ Abnormalities ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of correctly identifying painting defects; • Capable of successfully solving the painting defects in compliance with the relevant requirements on environment, occupational safety and health regulations; and • Capable of conducting inspection to ensure that no painting defect is found on the work piece upon completion of work and providing written report after the work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the capability to perform spray painting and paint mixing. (This UoC replaced 108713L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Defining defects of paint coating
Code	111716L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to conduct complicated defects on vehicle body paint work and conduct or arrange rectification according to the instructions in the vehicle paint manufacturer's handbook and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct inspection and providing written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Defects on vehicle body paint work and their causes) • According to the vehicle paint manufacturer's handbook to understand the defects on vehicle body paint work, such as: ◦ Adhesion loss and chipping ◦ Blushing ◦ Crazing ◦ Fish eyes ◦ Mottling ◦ Pinhole ◦ Sand scratch swelling ◦ Solvent popping ◦ Blistering ◦ Cracking ◦ Featheredge cracking ◦ Orange peel ◦ Sag or Run ◦ Shrinking of putty ◦ Discoloration • Be familiar with the causes of the paint defects, such as: ◦ Surface preparation ◦ Choice of refinishing material ◦ Reading paint manufacture's instruction ◦ Operation condition and technique ◦ Thinning ◦ Drying time

	2. Performance (Rectification of the defects on vehicle body paint work.)
	• According to the vehicle paint manufacturer's handbook and the requirements of occupational health and safety and that of environmental protection, the curing methods of the paint defects as the followings:
	  ◦ Polishing with wax
	  ◦ Polishing with fine sanding paper
	  ◦ Flatting and respray
	  ◦ Respray from the prime layer
	  ◦ Respray from the bare layer

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of accurately identifying defects on vehicle body paint work according to the vehicle paint manufacturer's handbook and the relevant requirements on environment, occupational safety and health regulations; • Capable of conducting or arranging rectification of the defects on vehicle body paint work; and • Capable of conducting inspection of vehicle body paint work and completing simple defects report upon completion of work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of vehicle paint materials. (This UoC replaced 108717L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Dismantle and repair the Wireless Fidelity (Wi-Fi), General Packet Radio Service (GPRS) and various sensors for electrified vehicles
Code	111717L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to dismantle and repair Wi-Fi, GPRS and various sensors for electrified vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct basic tests on the components, and provide work report upon completion of work.
Level	3
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Wi-Fi, GPRS and various sensors for electrified vehicles) • Understand the structures, working principles and operation of the Wi-Fi, GPRS and various sensors for electrified vehicles. • Identify the dismantling and repair procedures according to the instructions in the corresponding vehicle manufacturer's service manual or relevant information. • Master the use of special service tools and equipment to dismantle and repair the Wi-Fi, GPRS and various sensors for electrified vehicles. • Familiar with the relevant legal requirements on road and vehicle safety, and environmental protection. 2. Performance (Dismantle and repair the Wi-Fi, GPRS and various sensors for electrified vehicles) • According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, dismantle and repair the Wi-Fi, GPRS and various sensors for electrified vehicles safely, including: ◦ Accurately identify the common faults and symptoms of the components by visual inspection and functional test ◦ Test the operation and effectiveness of the components or systems using special service tools. ◦ Rectify the typical component/system faults. • Conduct performance and safety inspection after the work and provide work report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of dismantling and repairing the Wi-Fi, GPRS and various sensors for electrified vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of conducting functional tests on components/systems, and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of the construction and operation of electrified vehicles. The practitioner concerned should be a recognised competent person in electric-drive vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of Vehicles) Regulations (This UoC replaced 108694L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Maintain various vehicle servicing tools and equipment
Code	111718L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to maintain vehicle servicing tools and equipment to keep them in good condition according to the instructions of various vehicle servicing tool and equipment manufacturers masterfully. They should also arrange regular inspection and rectification required for the tools and equipment that are governed by regulations.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Purposes and operating principles of vehicle servicing tools and equipment) • Identify the purposes and applications of vehicle servicing tools and equipment, including electrically insulated types. • Master the instructions in the manufacturer's user guide for the vehicle servicing tools and equipment, including the operation, safety awareness and relevant governing regulations, the electrically insulated tools, lifting appliances and power tools, for instance. • Explain the operating principles of special vehicle servicing tools and equipment. 2. Performance (Maintenance of various categories of tools and equipment) • Implement the scheduled maintenance plan for special vehicle servicing tools and equipment according to the vehicle servicing tools and equipment manufacturer's user guide. • Arrange a routine schedule of the validity evaluation, maintenance, test and calibration for the tools and equipment, including but not limited to roller brake testers, chassis dynamometer, exhaust emission analyser (for spark-ignition engine), opacimeter (for compression ignition engine), wheel aligner, torque wrenches, lifting appliances, axle stand, insulation tester, gas leakage detector and warning system, oscilloscope, electrical circuit tester, OBD tester, cell balancer, insulated electrical service hand tools, and insulation gears. • Conduct an initial diagnosis and issue a suspension notice for the expired or malfunctioning tools and equipment. • Arrange the repair and maintenance of vehicle servicing tools and equipment. • Keep an updated record on the maintenance and repair of vehicle servicing tools and equipment. • Keep and/or display the documents concerning the regular tests/calibration of vehicle servicing tools and equipment.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of implementing the scheduled maintenance of vehicle servicing tools and equipment according to the instructions of various vehicle servicing tool and equipment manufacturers; • Capable of conducting validity evaluation and initial diagnosis of faults for the vehicle servicing tools and equipment, and issuing suspension notice where necessary;

	• Capable of arranging a routine inspection schedule for the tests and calibration of the vehicle servicing tools and equipment that are recommended by manufacturers or governed by regulations, and keeping/displaying documents concerned; and • Capable of recording, keeping and updating the maintenance and repair record of the vehicle servicing tools and equipment accurately.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses comprehensive knowledge of the tools and equipment for vehicle servicing and inspection The major legislation/rules involved in this unit of competency are as follows: • Factories and Industrial Undertakings • Occupational Safety and Health • Environmental protection (This UoC replaced 108702L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis and rectification of the heating, ventilation and air conditioning (HVAC) system of various vehicle types
Code	111719L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to independently conduct rectification and diagnosis of the HVAC system according to statutory requirements and the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be capable of conducting system tests and providing work report upon completion of work.
Level	3
Credit	4 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of HVAC systems on vehicles) • Master various types of refrigerants for vehicles, their characteristics, handling procedures and the possible impacts on the environment, as well as relevant statutory requirements. • Understand the structure and operating principles of HVAC system, including the electrical and mechanical power drive and functional controls. • Master the principles of refrigeration and electricity. • Be familiar with the inspection and service procedures of the HVAC systems according to relevant local statutory requirements and the service instructions provided by the vehicle manufacturer. • Understand the environmental protection regulations and requirements on the recovery of refrigerants. • Understanding of the relevant legal requirements on occupational safety and health and environmental protection, including the use of special service tools, personal protection and first-aid equipment.

	2. Performance (Conduct fault diagnosis and rectification on HVAC system) • Safely conduct the rectification procedures after diagnosis against faulty functions of the HVAC system according to relevant local statutory requirements, the information in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as environmental protection, including: ◦ Identify common problems of the HVAC system operation control and components by visual inspection; ◦ Select suitable tools or instruments to inspect and analyse the fault symptoms of the HVAC system, including the power supply, driving units and functional controls; ◦ Inspect and rectify the parts and electric/electronic components of the HVAC system according to data obtained from the diagnostic procedures; the rectification work may include dismantling, replacing, re-assembling, fine-tuning and testing relevant system components and accessories; ◦ Select suitable tools or instruments to accurately recharge the refrigerant and lubricant quantities, check refrigerant leakage and identify the location of problem precisely; ◦ With the use of suitable tools or instruments and application of the theories of refrigeration and electricity, analyse the faults and assess the performance of the HVAC system; ◦ Maintain the record of refrigerant consumption to comply with the environmental protection regulations; and ◦ Provide work report after the rectification of problem is done successfully.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of independently conducting complicated fault diagnosis on the HVAC system performance, including but not limited to instable temperature, low efficiency and noisy operation, according to the instructions in the vehicle manufacturer's service manual; • Capable of handling the recycling and recharging procedures for the refrigerant of the air- conditioning system safely according to relevant legislative provisions, the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of conducting the refrigerant leakage test and identifying the location of problem with the air-conditioning system; and • Capable of implementing or arranging rectification work for the HVAC system according to diagnostic results and performance check; conducting system tests and evaluation, and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses comprehensive knowledge of vehicle electronic, electrical and HVAC systems servicing as well as refrigerant handling. If the practitioner is serving on electrified vehicles, he/she shall be a recognised competent person on electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent; the servicing process shall be under the high-voltage system power-down condition, and confirmed by the checking result of special service tools / authorised competent person. In the case that the diagnosis or rectification is conducted under the live electric power of high voltage, the practitioner shall possess of recognised competency/qualification, such as an electric vehicle – high voltage training course, or equivalent. (This UoC replaced 108708L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Execute the work on the repair quotation for insurance claims
Code	111720L3
Range	This unit of competency is applicable in vehicle service centres. Practitioners should be able to provide necessary information on the repair quotation for insurance claims, and the application procedures under different situations/circumstances according to organisational procedure. They should also make appropriate judgments and proposals to help customers complete the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Repair quotation for insurance claims) • Master respective local insurance legislative provisions governing issues such as traffic accidents and the use of roads. • Master the types of vehicle insurance in Hong Kong, the requirements of different vehicle types as well as the procedure and requirements of claims for compensation with respect to different types of insurance, and possess a recognised professional qualification, such as a licensed insurance agent. • Master the general procedure for handling traffic accidents, including appropriate solutions for accidents involving/not involving injury or death. • Master the procedure and documents required for application of vehicle insurance and repair quotation for insurance claims. • Master the division of work and workflow of the departments within the organisation. • Master the calculation of the repair quotation, including cost and profits. • Master the mediation work for the traffic incident, its process and the required documents.

	2. Performance (The work on repair quotation for insurance claims)
	• Receive customers and execute the work on repair quotations for insurance claims and associated application procedures.
	• Conduct preliminary assessments of traffic accidents for customers; make an objective analysis/assessment with respect to different circumstances and situations; and provide or make appropriate suggestions/arrangements.
	• Provide customers with information on the procedure for handling the situation after the occurrence of a traffic accident, including:
	  ◦ Advise customers on the handling of the incident, such as the necessity of reporting to the police, and the notification of the respective insurer to declare claims;
	  ◦ Make detailed repair estimates for the vehicle involved; calculate the time and expenses required; and make a detailed report;
	  ◦ Contact the respective insurer upon obtaining customers' authorisation and arrange claims adjuster to make a fair assessment; and discuss with the insurer on issues such as repair estimates and expenses, etc., according to the principle of fair assessment;
	  ◦ Familiar with the supply of parts and the progress of repairs in different departments; coordinate the work of different departments; obtain the latest information to report to the customer, and follow up; and
	  ◦ Execute the mediation work for the traffic incident.
	• Identify and arrange an alternate service provider when the organisation fails to provide the required services, coordinate the arrangement and progress of different parties, and calculate the cost, profits and charges involved.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the types of vehicle insurance, coverage and the procedure for declaration and claims; • Capable of making judgments and proposals to the claims case; • Capable of understanding and analysing independently the procedure taken by customers after the occurrence of the incident and providing relevant professional and objective advice; • Capable of contacting the respective insurer and claim adjusters to take follow-up action on the declaration for repair and compensation claims; and • Capable of facilitating resolutions between parties concerned in a traffic incident, and completing the required documents in mediation.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed a good knowledge of vehicle servicing and recognised professional qualifications. (This UoC replaced 108749L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Mix paints
Code	111721L3
Range	This unit of competency is applicable in vehicle body vehicle painting workshops. Practitioners should be able to mix paints according to painting formulas, carrying out processes such as spray test, colour checking, tinting adjustment and providing written report.
Level	3
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Mix and blend the paints)
	• Understand basic colour theory
	• Be familiar with the basic principles of colour mixing, including:
	  ◦ Colour wheel
	  ◦ Complementary colour
	  ◦ Colour effect
	• Understand the colour codes used by vehicle manufacturer and paint manufacture.
	• Understand the methods of finding out the original colour of the vehicle body according to information such as vehicle brand, vehicle type, year of production and code.
	• Understand the tools and instruments for mixing and blending paints.
	• Be familiar with the relevant legal requirements on environment protection.
	2. Performance (Mix and blend the paints)
	• Select and use appropriate personal protective equipment, tools and instruments correctly.
	• Comply with working instructions on established dangerous goods, pollutants and chemical waste; and handle and dispose chemical waste according to the Code of Practice for Chemical Waste Producer.
	• According to the instructions of vehicle manufacturer and paint manufacture as well as the ordinances of occupational health and safety and environmental protection, carry out the procedure correctly and provide written report focusing on :
	  ◦ Abnormalities
	  ◦ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of finding out the original colour formula of the vehicle according to the code provided by vehicle manufacturer or the information of the vehicle; and • Capable of mixing and blending the colour by measuring correctly according to the specified formula, and carrying out work such as spray testing, colour checking, tinting adjustment and colour matching and final inspection after work and providing written report.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the knowledge of paints and know how to handle chemicals. (This UoC replaced 108668L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose and rectify vehicle drivetrain faults
Code	111722L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to conduct complicated fault diagnosis on the vehicle drivetrains and conduct rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct functional tests and fill in simple fault record and provide work report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various types of vehicle drivetrain) • Master the structure and operating principles of vehicle drivetrains, including mechanical, electrical, hydraulic and pneumatic powered units, their controls and actuation components: ◦ Manual and automatic gearbox (including gear and continuously variable transmission) ◦ Hubs and bearings ◦ Drive shafts and joints ◦ Clutch ◦ Power take-off (for commercial vehicles only) ◦ Differentials (including regular, limited slip and lock types) • Familiar with the functions and applications of diagnostic equipment and special service tools for the vehicle drivetrain and component services • Master the fault diagnosis process for vehicle drivetrains with reference to the instructions in the vehicle manufacturer's service manual, including the faults occur within: ◦ Mechanical systems ◦ Electrical/electronic control and actuation systems ◦ Hydraulic control and actuation systems ◦ Pneumatic control and actuation system (for commercial vehicles only) • Identify the types of lubricant and working fluids applied to the systems • Understand relevant legal requirements on road traffic, safety and environmental protection.

	2. Performance (Diagnose and rectify vehicle drivetrain faults)
	• Correctly choose and apply the diagnostic equipment and special service tools for the services of the vehicle drivetrain.
	• Accurately conduct complicated fault diagnosis on vehicle drivetrain, according to the instructions in the manufacturer's service manual and the requirements concerning occupational health and safety and that of environmental protection.
	• Perform the rectification process for the faulty system / components according to the diagnostic result.
	• Conduct functional tests and complete a simple fault report.
	• Conduct performance and safety inspection after work and provide work report, focusing on:
	  ◦ Abnormalities
	  ◦ Measuring data
	  ◦ Major decisions

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting and applying the suitable diagnostic equipment and special service tools for locating the faulty functions and rectifying the faulty system/components of vehicle drivetrains, respectively; • Capable of executing complicated fault diagnosis on vehicle drivetrain faults, including but not limited to traction power loss, abnormal operating noise and vibrations, abnormal gear shifting quality, inaccurate torque and driving speed distributions, according to the instructions in the manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of conducting rectification according to diagnostic results; and • Capable of executing functional tests and providing work report incorporated with fault record upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of vehicle drivetrains. The major legislation/codes involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations. (This UoC replaced 108700L3 and 108724L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Provide technical support and advice to colleagues for vehicle repair techniques
Code	111723L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to provide effective technical support and advice to colleagues safely according to the vehicle manufacturer's instructions, service manual or other appropriate information. They should also be able to fully coach colleagues in implementing the advice, assessing its safety and effectiveness upon completion of work, providing technical report and initiating improvement actions.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Contents of technical support and advice to colleagues for vehicle servicing) • Master communication skills with colleagues and the vehicle manufacturer. • Master technical report writing skills. • Have a good understanding of the vehicle manufacturer's instructions (service manual and supplementary information) and temporary local measures agreed by the management. 2. Performance (Provide technical support and advice to colleagues for vehicle servicing) • Provide effective technical support and advice to colleagues based on the vehicle manufacturer's information (service manual and supplementary information) and temporary local measures agreed by the management, including: ◦ Finding out the cause of the problem via road test or with the aid of diagnostic equipment, and the solution ◦ Coaching colleagues to accurately implementing the solution ◦ When the service database fails to provide an effective solution, report to the manufacturer precisely and promptly for assistance. ◦ If necessary, recommend the manufacturer and the management on temporary local relief measures ◦ Following through on the effectiveness of the solution adopted and submitting a technical report ◦ Initiating improvement actions for precaution and training purposes ◦ Coaching colleagues in understanding the authorised work scope, suitably applying the safety gear and service setup, and implementing the safety practices in electrified vehicle servicing
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of providing effective technical support and advice to colleagues in the vehicle service environment safely according to the vehicle manufacturer's service manual or other appropriate information meeting relevant legal requirements; and • Capable of conducting an assessment of the safety and effectiveness of adopted technical advice upon completion of work, providing technical report and initiating the improvement actions.

Remark	The credit value of this unit of competency assumes that the practitioner already possesses comprehensive knowledge and skills of vehicle diagnosis as required of a vehicle technician. In the case of electrified vehicle servicing, the practitioners concerned shall be the competent persons recognised by the governing authority concerned and shall follow the Practice Guideline issued by the authority, such as the Electrical and Mechanical Services Department. The major legislation/codes involved in this unit of competency are as follows: • Road Traffic Ordinance • Air Pollution Control Ordinance • Occupational Safety and Health Ordinance • Gas Safety Ordinance (This UoC replaced 108726L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct maintenance for special equipment and instruments for vehicle inspection
Code	111724L3
Range	This unit of competency is applicable in vehicle service or inspection workplaces. Practitioners should be able to conduct maintenance for special equipment and instruments for vehicle inspection according to the equipment manufacturer's manual.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Maintenance of special equipment and instruments for vehicle inspection) • Describe the maintenance manual of special equipment and instruments for vehicle inspection. • Master the technique for maintaining the instruments and equipment. 2. Performance (Conduct maintenance procedures of special equipment and instruments for vehicle inspection) • Conduct maintenance procedures of special equipment and instruments for vehicle inspection regularly according to the instructions in the equipment manufacturer's manual, including: ◦ Check, clean up, tune and calibrate ◦ Top up materials and replace consumable materials ◦ Keep and update the documents in relation to instruments and equipment, such as operating manuals, and maintenance records/information ◦ Keep, update, reset and upgrade computer software relevant to equipment • Maintain the special equipment and instruments for vehicle inspection, such as: ◦ Exhaust gas analysers ◦ Diesel smoke meters ◦ Chassis dynamometers and associated sub-systems ◦ Engine dynamometers and associated sub-systems ◦ Engine compression tester and thermometers ◦ Handheld testers and multimeters ◦ Brake testers and decelerometers ◦ Hoists, lifting gears and axle stands ◦ Wheel aligners ◦ Wheel balancers ◦ Headlamp aligners ◦ Refrigerant recovery and reclaim station ◦ Liquid and gaseous fuel pressure gauges ◦ Combustible gas leakage detection, extraction and warning devices/systems ◦ High-impedance multimeters and insulation testers ◦ Other special equipment and instruments for vehicle inspection

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of masterly conducting maintenance on special equipment and instruments for vehicle inspection according to the equipment manufacturer's manual; and • Capable of updating and maintaining the documents concerning the special equipment and instruments for vehicle inspection.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has comprehensive knowledge of the working principles and operation of special equipment and instruments for vehicle inspection and general computer operational techniques. The major legislation/rules involved in this unit of competency are as follows: • Factories and Industrial Undertakings • Occupational Safety and Health • Environmental protection • Gas safety • (This UoC replaced 108708L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose various faulty liquid fuel supply systems of combustion engine vehicles
Code	111725L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to masterfully conduct complicated fault diagnoses on various combustion engine vehicle liquid fuel supply systems and conduct or arrange rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements of environmental protection, occupational safety and health regulations. They should also be able to conduct system tests and submit simple fault report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various liquid fuel systems) • Good understanding of the structure and operating principles of various combustion engine vehicle fuel systems (e.g., petrol and diesel). • With reference to the corresponding vehicle manufacturer's servicing instructions, understand the fault diagnosis process for various fuel systems, such as using exhaust gas analysers to conduct system fault diagnosis (for spark-ignition engine only). • Master fuel system diagnosis and the operation of testing equipment and instruments, such as various types of on-board diagnostic systems. • Good understanding of relevant laws and regulations governing vehicle exhaust emissions. • Understanding of the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Conduct fault diagnosis on liquid fuel supply systems on combustion engine vehicles) • Accurately conduct complicated fault diagnosis on various liquid fuel supply systems of combustion engine vehicles according to the instructions in the vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection, including the use of special equipment and instruments. • Conduct or arrange rectification to eliminate the fault according to diagnostic results. • Accurately test the fuel systems, including using relevant equipment and instruments to conduct the tests. • Conduct a performance and safety inspection after the work and provide simple fault report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions. • Assess the measurement result to determine if the vehicle emissions meet the local statutory requirements.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of accurately conducting complicated fault diagnosis on various liquid fuel supply systems of combustion engine vehicles leading to incorrect fuel injection timing, pressure and quantity with reference to the instructions in the vehicle manufacturer's service manual and the relevant requirements of environmental protection, occupational safety and health regulations; • Capable of conducting or arranging rectification according to diagnostic results; • Capable of conducting fuel system tests and submitting simple fault report upon completion of work; and • Capable of assessing vehicle emission data correctly according to the guidelines of relevant laws and regulations on vehicle emissions.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed comprehensive knowledge of inspecting and repairing various types of fuel systems of combustion engine vehicles. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational, Health and Safety Ordinance • (This UoC replaced 108696L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fuel purging procedures for component dismantling on liquefied petroleum gas system
Code	111726L3
Range	This unit of competency is applicable in the designated work bay of vehicle service workshops. Practitioners should be able to conduct the fuel purging procedures safely for allowing the subsequent component dismantling work according to the instructions in the vehicle manufacturer's service manual and relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct verification test and complete simple fault report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various liquefied petroleum gas systems on vehicles) • Good understanding of the nature and characteristics of liquefied petroleum gas for vehicular application, the handling and safety precautions. • Good understanding of the structure and operating principles of various types of liquefied petroleum gas systems (e.g., mixer, injection, etc.) • Master the application of special service tools for purging of liquefied petroleum gas in the system, including but not limited to the gas leakage detector, pressurised inert gas, system pressure gauges and hand valves, and gas extraction system. • With reference to the corresponding vehicle manufacturer's service manual, master the fuel purging procedures for different types of liquefied petroleum gas systems. • Good understanding of relevant laws and regulations governing the handling of vehicle liquefied petroleum gas. • Understanding of the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Conduct fuel purging for various liquefied petroleum gas systems on vehicles) • Correctly apply the special service tools for gas leakage testing and the gas extraction system throughout the purging process. • Accurately determine the inert gas pressure to conduct the push-back action for the fuel lines according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection, including the use of special tool set to conduct the purging procedures for the liquefied petroleum gas injection system. • Conduct the correct purging procedures for the liquefied petroleum gas mixer system according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection. • Accurately verify the effectiveness of the purging action and provide simple fault report for abnormalities. • Handle liquefied petroleum gas system components according to relevant local statutory requirements.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of arranging the purging process in an appropriate workplace and applying relevant safety measures to ensure a combustible gas-free environment throughout the process; • Capable of accurately determining the correct push-back pressure of inert gas and correctly applying the special service tools for the purging process of the liquefied petroleum gas injection system; • Capable of safely conducting the purging procedures for various types of liquefied petroleum gas systems with reference to the instructions in the associated vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of providing simple fault report for abnormalities upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed comprehensive knowledge of inspecting and repairing various types of fuel systems on liquefied petroleum gas vehicles. When conducting the work on the liquefied petroleum gas fuel system, the practitioner concerned should be a recognised competent person in liquefied petroleum gas vehicles. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Gas Safety Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair various types of fuel supply systems
Code	111727L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to check and repair various types of fuel supply systems equipped on gasoline and diesel vehicles according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on occupational safety and health, and environmental protection. They should also be able to conduct performance tests on the systems and provide a check report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various types of fuel supply systems equipped on gasoline and diesel vehicles) • Comprehend the nature, characteristics, handling and safety precautions of automotive fuels, such as gasoline, diesel and biodiesel. • Good understanding of the structure, operating and control principles of gasoline and diesel fuel supply systems and the associated components, including sensors and actuators. • Good understanding of the application of different fuel control and injection modes, the performance of fuel supply system and associated components, their effects on power output and emission control. • Comprehend the procedure of checking and repairing various types of fuel supply systems and associated system components. • Understanding of the relevant legal requirements on occupational safety and health, road and vehicle safety and environmental protection.

	2. Performance (Check and repair various types of fuel supply systems equipped on gasoline and diesel vehicles) • According to the instructions in the vehicle manufacturer's service manual, the Road Traffic Ordinances of Hong Kong and the relevant requirements on occupational safety and health, and environmental protection, safely check the proper operation of the fuel supply system, repair and replace the associated faulty system components, including: ◦ Identify the general problems of various types of fuel supply systems by visual inspection and live tests. ◦ Apply the appropriate special testing devices to identify the faulty functions of various fuel supply system types and associated components. ◦ Rectify the faulty system components, including but not limited to, dismantlement, replacement, reassembly and testing of the fuel supply system components, such as pump, regulator, sensors and actuators, to eliminate typical system failure and restore performance. • Conduct performance and safety inspection after the work and provide a check report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of checking and repairing various types of fuel supply systems and associated components for gasoline and diesel vehicles, and applying special testing devices to conduct functional tests on the system components, including sensors and actuators, and the effectiveness of system controls, according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on occupational safety and health, and environmental protection. • Capable of conducting the system performance test and safety inspection, and providing check report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of automotive technology, servicing skills and handling of various types of fuel. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Dangerous Goods Ordinance • Occupational Safety and Health Ordinance • (This UoC replaced 108648L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Overhaul internal combustion engines
Code	111728L3
Range	This unit of competency is applicable to the technicians working in the vehicle service department. Practitioners should be able to obtain a thorough understanding of the structure and operating principles of internal combustion engines and the impact on power output and fuel consumption, and to inspect and repair the engines efficiently and accurately according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operation of various types of internal combustion engines) • Master the use and function of special service and measuring tools/equipment, including non-destructive tests for engine component inspection and repair. • Master the structure, materials, functions and service specifications of all engine components. • Understand the configuration of various movable components and the needs of dynamic balance. • Understand the relation between engine setting and relevant specifications, such as capacity, compression ratio, bore-stroke ratio, torque, revolving resistance, etc. • Understand the structure and operating principles of devices enhancing breathing efficiency and emission control, such as variable intake and exhaust tract lengths, variable valve timing and lift, matching of pressure charging system with engine, exhaust gas recirculation device, crankcase ventilation, etc. • Understand the principles of engine working temperature control and reduction of movable component wear. • Good understanding of engine operating condition effect on the power development, fuel consumption and emission quality.

	2. Performance (Overhaul internal combustion engines) • Conduct dismantling, checking, repairing and restoring procedures for various types of internal combustion engines according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. • Determine the serviceability of engine components, including but not limited to journal bearings, cylinder bores, pistons and piston rings, using recognised measurement equipment and methodology, including non-destructive tests. • Identify the adaptation of replacement parts, including gaskets and seals. • Install and align the phasing of peripheral components, including sensors and actuators, attached to the engine, such as the valve timing control mechanism and injection/pressure pumps, injectors, etc. • Review the causes of defects and excessive wear of engine components; submit a written report to seniors covering abnormalities, measurement results and decisions made, the proposal of preventive measures and suggestions for improvement.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of obtaining a thorough understanding of the structure, functions, operating principles and service specifications of all engine components, such as pistons, piston rings, bearings, etc.; • Capable of conducting the engine overhaul procedures, precise measurement of engine components, identifying the replacement parts for restoration and aligning the phasing of peripheral components, according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of compiling written report covering the inspection results and decisions made to resume normal service condition, the preventive measures proposal and suggestions for improvement, according to the specific defects found in respective components.
Remark	The credit value for this competency unit assumes that the practitioner has already acquired extensive knowledge of internal combustion engine structure and operating principle, and general overhaul skills. (This UoC replaced 108647L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Overhaul the drivetrain mechanism
Code	111729L3
Range	This unit of competency is applicable to technicians working in vehicle service workshops. Practitioners should be able to thoroughly understand the structure and operating principles of drivetrain and the impacts on fuel consumption and driving performance, and to inspect and repair the drivetrain mechanism efficiently and accurately according to the instructions in the vehicle manufacturer's service manual and the relevant requirements for environmental protection, occupational safety and health regulations.
Level	3
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operation of various types of drivetrain mechanism) • Master the use and function of special service and measuring tools / equipment, including Prussian blue, for drivetrain component inspection and repair. • Master the structure, materials, functions and service specifications of all drivetrain components. • Good understanding of the working principles, efficiency and application limits of various drivetrain mechanisms and their components, such as manual / automatic transmission systems and the shift controls (manual control mechanism, electrohydraulic control including hydraulic circuit, electronic signalling and actuating), continuously variable transmission, holding mechanism for epicyclic geartrains, torque converter, clutch, half / drive / propeller shaft and their joints, final-drive unit including lock / limited slip differentials and transfer cases. • Understand the effects of transmission fluid quality and characteristics on transmission efficiency, shift control and protection of components. • Understand the impact of operating performance of the drivetrain mechanism on fuel consumption and driving performance.

	2. Performance (Overhaul the drivetrain mechanism) • Conduct dismantling, checking, repairing and restoring procedures for various types of drivetrain mechanisms and corresponding components according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. • Determine the serviceability of drivetrain components, including but not limited to bearings, synchronisers, gears, valves, friction discs and linings, drive belts and pulleys, using special service tools and recognised measurement equipment, such as puller, dial gauge for play, Prussian blue for component mating check, etc. • Identify the adaptation of replacement parts, such as springs, solenoid valves, gaskets, seals, etc. • Install and adjust preload for bearings and springs in gearbox, differentials and shafts. • Inspect the effective operation and performance of the driveline mechanism after overhaul. • Review the causes of defects and excessive wear of drivetrain components; submit written report to seniors covering abnormalities, measurement results and decisions made, the proposal of preventive measures and suggestions for improvement.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the structure, functions, operating principles and service specifications of various drivetrain mechanisms and corresponding components thoroughly, including but not limited to friction discs and linings, drive belts and pulleys, gears, bearings, valves, and shift controls; • Capable of conducting the drivetrain overhaul procedures, such as precise measurement of drivetrain components, identifying the replacement parts for restoration, replacement of defective parts, adjusting the preload for bearings and springs, etc., according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of inspecting the effective operation and performance of the driveline mechanism after completion of overhaul service; and • Capable of compiling written reports covering the inspection results and decisions made to resume normal service conditions, the preventive measures proposal and suggestions for improvement, according to the specific defects found in respective drivetrain components.
Remark	The credit for this competency unit assumes that the practitioner has already possessed extensive knowledge of automotive transmission system structure and operating principles, and the general overhaul skills.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair vehicle air-conditioning system components
Code	111730L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to independently check and repair the vehicle air-conditioning system components safely according to relevant legislative provisions of Hong Kong and the instructions in the vehicle manufacturer's service manual. They should also be capable of conducting functional tests on components and providing written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of the vehicle air-conditioning system components) • Understand the characteristics of refrigerants for vehicle applications, the relevant handling procedure, safety rules and regulations. • Master the structure and operating principles of vehicle air-conditioning systems, including the major system components. • Good understanding of the refrigerant and heated water circuits of vehicle air-conditioning systems. • With reference to the relevant legislative provisions of Hong Kong and the instructions in the vehicle manufacturer's service manual, a good understanding of the checking and repairing procedures for the vehicle air-conditioning systems and associated components. • Understand the environmental protection regulations and requirements on the recovery of refrigerant. • Understand the relevant legal requirements on occupational safety and health, and environmental protection.

	2. Performance (Check and repair the major components of vehicle air-conditioning systems) • According to the relevant legislative provisions of Hong Kong, the instructions in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely check, repair and test the vehicle air-conditioning systems, including: ◦ Apply specific tools and instruments to identify the serviceability of vehicle air-conditioning system components, including condenser, air blower, dryer and flow control components ◦ Identify the problems with the major components, such as compressors and motors, magnetic clutches, expansion valves, dryers, and etc. of the vehicle air-conditioning systems ◦ Rectify or recondition the faulty components of the vehicle air-conditioning system ◦ Use prescribed tools or instruments to accurately test refrigerant leakage in the systems upon the completion of the refrigerant recharging process • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions and the effectiveness ◦ Suggestions on the preventive measures and improvement
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking and repairing the vehicle air-conditioning system components, such as the compressor, motor, magnetic clutch, air flow control, etc., safely according to the instructions in the vehicle manufacturer's service manual; • Capable of conducting functional tests on the vehicle air-conditioning system and associated components upon completion of rectification; • Capable of checking any refrigerant leakage in vehicle air-conditioning system upon the completion of the refrigerant recharging process, and • Capable of compiling reports covering the inspection results and decisions made to resume normal service conditions, the preventive measures proposal and suggestions for improvement, according to the specific defects found in the respective vehicle air-conditioning system components.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses comprehensive knowledge of vehicle air-conditioning system servicing as well as refrigerant handling. If the practitioner is serving on electrified vehicles, he/she shall be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low-voltage training course, or equivalent; the servicing process shall be under the high-voltage system power-down condition and confirmed by the checking result of special service tools/authorised competent person. In the case that the diagnosis or rectification is conducted under the live electric power of high voltage, the practitioner shall possess a recognised competency/qualification, such as the electric vehicle – high voltage training course, or equivalent. (This UoC replaced 108656L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Inspect and overhaul motorcycle mechanical units
Code	111731L3
Range	This unit of competency is applicable in motorcycle service workshops. Practitioners should be able to inspect and overhaul motorcycle mechanical units safely according to the instructions in the motorcycle manufacturer's service manual. They should also be capable of conducting safety inspections, and providing inspection report upon completion of work.
Level	3
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Structure and operating principles of motorcycle mechanical units, the inspection and overhaul work)
	• Master the structure of motorcycle mechanical units, such as:
	  ○ Engine and respective sub-systems
	  ○ Drivetrain system
	  ○ Steering systems
	  ○ Suspension systems
	  ○ Chassis assemblies
	• Familiarise the inspection and overhaul work, including:
	  ○ Dismantling
	  ○ Assessment
	  ○ Repair or recondition
	  ○ Replacement
	  ○ Adjustment of internal components
	  ○ Reassembly
	  ○ Functional testing
	• Master the application and use of special service tools and equipment for the system / component serviceability and functional checking.
	• Master the inspection and overhaul procedures and the specifications of motorcycle mechanical units with reference to the instructions in the motorcycle manufacturer's service manual.
	• Understand the relevant legal requirements on road and vehicle safety, and environmental protection.

	2. Performance (Inspect and overhaul motorcycle mechanical units)
	• According to the specifications and instructions in the motorcycle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely inspect and overhaul motorcycle mechanical units, including:
	  ◦ Inspect the function and serviceability of motorcycle mechanical systems and associated components using special service tools and equipment
	  ◦ Repair or recondition the faulty components to comply with serviceable standards
	  ◦ Eliminate system faults and safety failures
	• Conduct performance test and safety inspection after the work and provide an inspection report, emphasizing:
	  ◦ Abnormalities
	  ◦ Measuring data
	  ◦ Major decision

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of inspecting the function and serviceability of motorcycle mechanical systems and associated components using special service tools and equipment. • Capable of overhauling the faulty mechanical units/components safely to comply with serviceable standards with reference to the instructions in the motorcycle manufacturer's service manual and relevant legal requirements; and • Capable of conducting safety inspections of the mechanical systems and all components and providing inspection report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses knowledge of motorcycle mechanical units. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance • Environmental Protection Ordinance and related Code of Practice • (This UoC replaced 108682L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the vehicle body welding
Code	111732L3
Range	This unit of competency is applicable in vehicle body repair workshops and body assembly workshops. Practitioners should be masterly able to understand welding techniques (including Oxyacetylene Welding/ cutting an, MIG/TIG and Spot) according to working instructions and the vehicle manufacture's servicing manual (included electrified vehicle) and the relevant requirements on environment, occupational safety and health regulations. Providing written reports after the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle body welding) 2. Be familiar with the standard requirement of the workpiece set by the vehicle manufacturer (including electrified vehicle). • Master the welding process ◦ Oxyacetylene Welding ◦ Arc Welding ◦ MIG/TIG ◦ Spot • Master about flaws commonly found in welding seams, such as: ◦ Burning through ◦ Slag inclusion ◦ Air hole. • Be familiar with the relevant legal requirements on road and vehicle ◦ safety and environment protection. 3. Performance (Vehicle body welding) • Select suitable welding equipment according to the requirement • of workpiece; establishing welding procedure and safety ◦ measures. ◦ Prepare workpieces, such as align mating parts and protect • other portions of the vehicle (especially for electrified vehicle) • being affected by welding. ◦ Carry out the welding process and provide written report after • the work.
Assessment Criteria	The integrated outcome requirements of this unit of competence are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the hazards caused by the welding ◦ process and relevant rules of safety; and

	▪ Capable of correctly selecting suitable welding equipment to carry ◦ Out welding process; and ▪ Capable of conducting inspection welding seams and rectifying the ◦ flaws upon completion of work.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the skills of using general welding equipment and the basic knowledge of vehicle body structure. The re levant ordinances/rules involved in this unit of competence are as follows: • Factories and Industrial Undertakings (Gas Welding and Flame • Cutting) Regulations ◦ Code of Practice - Safety and Health at Work for Gas Welding and • Flame Cutting ◦ Code of Practice - Safety and Health at Work for Manual Electric • Arc Welding (This UoC replaced 108644L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis on the low-voltage electrical systems onboard
Code	111733L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to independently conduct diagnosis and analysis on the vehicle low-voltage electrical systems of vehicle according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be capable of conducting system tests and evaluations and providing written report upon completion of work.
Level	3
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various vehicle low-voltage electrical systems) • Master the principles of electricity and electronics. • Demonstrate the function and application of specified electronic/electric tools and equipment for circuit/component fault diagnosis. • Comprehend the requirements of local legislative provisions in relation to various vehicle low-voltage electrical systems, such as: ◦ lighting, signalling and warning systems, including the instrument panel ◦ infotainment and communication systems ◦ security and monitoring systems • Master the electrical circuits, structure, control and operating principles of various vehicle low-voltage electrical systems, including their sensors and major components, such as: ◦ interior and exterior lighting, signalling and warning systems, including the instrument panel ◦ windscreen wiper, electrical operating seat, door, sunroof and window systems ◦ security and monitoring systems ◦ infotainment and communication systems ◦ other related electronic/electrical systems • Master the fault diagnosis procedures for various low-voltage electrical systems according to the requirements mentioned in the vehicle manufacturer's service manual.

	2. Performance (Conduct fault diagnosis on various vehicle low-voltage electrical systems)
	• Safely conduct the diagnostic procedures with the application of appropriate specified tools and equipment according to the instructions in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, including:
	  ○ Identification of the circuitry and component problems for the:
	  ▪ lighting, signalling and warning systems, including instrument panels
	  ▪ wiper, seat, door, sunroof and window systems
	  ▪ security and monitoring systems
	  ▪ infotainment and communication systems
	  ▪ other related electrical systems
	  ○ Analysis of the failure problems of the systems/components and identification of the causes of faults
	  ○ Rectification and adjustment of relevant system components and accessories
	• Evaluate the system performance and safety with the aid of specified equipment after servicing, and provide written report.
	• Assess the conformity of various low-voltage electrical systems to the relevant legislative provisions and the guidelines in the vehicle manufacturer's service manual, including:
	  ○ lighting, signalling and warning systems
	  ○ security and monitoring systems
	  ○ infotainment and communication systems

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:
	• Capable of accurately conducting complicated fault diagnosis on various vehicle low-voltage electrical systems according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations, including the:
	  ○ lighting, signalling and warning systems
	  ○ wiper, door, seat, sunroof and window systems
	  ○ security and monitoring systems
	  ○ infotainment and communication systems
	• Capable of implementing or arranging rectification work for relevant systems according to diagnostic results; and
	• Capable of evaluating the performance of relevant systems and providing written report upon completion of work.

Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses comprehensive knowledge of vehicle electronic and electrical systems servicing. The major ordinance involved in this unit of competency are as follows: • Occupational Safety and Health Ordinance • Road Traffic (Construction and Maintenance of Vehicles) Regulations (This UoC replaced 108704L3, 108705L3 and 108706L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose and rectify the faulty vehicle engine and components
Code	111734L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to masterly conduct complicated fault diagnosis on various types of vehicle engines and components, and conduct rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct functional tests, fill in a simple fault record and provide written report upon completion of work.
Level	3
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Structure and operating principles of vehicle engines and components)
	• Master the structure and operating principles of vehicle engines and components, including the interpretation of system layout and wiring circuit diagrams, such as:
	  ◦ engine
	  ◦ cooling and lubrication systems
	  ◦ fuel supply and metering systems for various fuel types
	  ◦ air intake and exhaust systems, including emission controls
	  ◦ ignition system (for spark-ignition engine only)
	  ◦ engine management systems
	• Familiar with the function and application of diagnostic equipment and repairing tools for the services of vehicle engines and components, such as onboard diagnostic testers, electrical circuit testers, emission analysers (for spark-ignition engines), opacimeters (for compression ignition engines), etc.
	• Master the diagnosis and rectification processes of the vehicle engine and components for mechanical, electrical and electronic related faults with reference to the vehicle manufacturer's service instructions.
	• Familiar with the relevant legal requirements on road and vehicle safety, occupational safety and health, and environmental protection.

	2. Performance (Conduct fault diagnosis and rectification on vehicle engines and components)
	• Correctly select and apply the diagnostic equipment to locate the faulty functions of vehicle engines and components.
	• Masterly diagnose the faulty vehicle engine and components with reference to the instructions in the vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection.
	• Safely conduct rectification to eliminate the faults according to diagnostic results and the instructions in the vehicle manufacturer's service manual and associated requirements.
	• Conduct performance and safety inspection after the work and provide written report focusing on:
	  ◦ Abnormalities
	  ◦ Measured data
	  ◦ Major decision

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting and applying suitable diagnostic equipment and repairing tools for fault-finding and rectification, respectively; • Capable of conducting complicated diagnosis procedures on the faults of various types of vehicle engine and components, including but not limited to engine power deficiency, unstable running, abnormal operating noise, fluid leakage, high fuel consumption and degraded emission quality, according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of making rectifications of vehicle engine and components according to diagnostic results; and • Capable of conducting functional tests for the vehicle engines and components, and filling in a simple fault report upon completion of work, and providing written report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of inspecting and repairing vehicle engines and components. (This UoC replaced 108697L3 and 108722L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose and rectify the faulty vehicle under-chassis systems
Code	111735L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able masterly to conduct complicated fault diagnosis on various vehicle under-chassis systems, and conduct rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct functional tests and provide written report upon completion of work.
Level	3
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Structure and operating principles of vehicle under-chassis systems)
	• Master the structure and operating principles of vehicle under-chassis systems including the interpretation of system layout, hydraulic and wiring circuit diagrams, such as:
	  ◦ power-assisted steering systems including wheel alignment (and dual-front axle steering for commercial vehicle)
	  ◦ suspension systems (for light vehicle only)
	  ◦ heavy-duty suspension systems including tandem axle suspension and lift-axle suspension (for commercial vehicle only)
	  ◦ power-assisted hydraulic brake systems including retardation units (for light vehicle only)
	  ◦ pneumatic brake systems including trailer brakes and retardation units (for commercial vehicle only)
	  ◦ integrated stability control system
	• Familiar with the function and application of diagnostic equipment and repairing tools for the services of vehicle under-chassis systems, such as onboard diagnostic testers, electrical circuit testers, wheel aligner, etc.
	• Master the diagnosis and rectification processes of the vehicle under-chassis systems for mechanical, electrical and electronic related faults with reference to the vehicle manufacturer's service instructions.
	• Familiar with the relevant legal requirements on road and vehicle safety, occupational safety and health, and environmental protection.

	2. Performance (Conduct fault diagnosis and rectification on vehicle under-chassis systems)
	• Correctly select and apply the diagnostic equipment to locate the faulty functions of vehicle under-chassis systems.
	• Masterly diagnose the faulty vehicle under-chassis systems with reference to the instructions in the vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection.
	• Safely conduct rectification to eliminate the faults according to diagnostic results and the instructions in the vehicle manufacturer's service manual and associated requirements.
	• Conduct performance and safety inspection after the work and provide written report focusing on:
	  ◦ Abnormalities
	  ◦ Measured data
	  ◦ Major decision and the effectiveness

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of selecting and applying suitable diagnostic equipment and repairing tools for fault-finding and rectification, respectively; • Capable of conducting complicated diagnosis procedures on the faults of various vehicle under-chassis systems, including but not limited to, abnormal operating noises and vibrations, ineffective integrated stability control, deficient steering power assistance, unstable driving responses, abnormal tyre wear, declining braking and suspension performance, according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of making rectifications of vehicle under-chassis systems according to diagnostic results; and • Capable of conducting functional tests for the vehicle under-chassis systems and providing written report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of inspecting and repairing vehicle under-chassis systems and components. (This UoC replaced 108698L3 and 108723L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Arrange vehicle examination
Code	111736L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to check and repair vehicles on customers' demand and ensure that the condition of vehicles can meet the statutory requirements of relevant road traffic regulations. They should also be able to deliver the respective vehicles to the vehicle examination department for examination upon completion of work to obtain documents such as a certificate of roadworthiness.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Arrangement of vehicle examination) • Master the structure of vehicle systems and the associated service and inspection techniques. • Understand relevant local regulations on road traffic and vehicle safety. • Understand the procedure for the arrangement of vehicle examination. 2. Performance (Arrange vehicle examination) • Inspect vehicle defects according to relevant local regulations and customer requirements on road traffic and vehicle safety. • Estimate the cost entailed for the repair items according to inspection results. • Carry out or arrange repairing procedure. • Test various vehicle systems upon completion of rectification work, including using instruments and equipment to test vehicles, so as to determine if they can meet the statutory requirements of relevant road traffic regulations. • Bring and prepare vehicle documents for the vehicle owners and make appointments and arrangements for inspection according to vehicle types. • Conduct further rectification for the parts that failed to pass the examination and arrange for a second examination. • Obtain documents such as the certificate of roadworthiness, etc. after passing vehicle inspection and deliver them to the vehicle owners.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of identifying vehicle defects according to relevant local regulations and customer requirements on road traffic and vehicle examination; • Capable of carrying out or arranging rectification work according to inspection results; • Capable of accurately inspecting various vehicle systems to ascertain that they can meet the statutory requirements of relevant road traffic regulations; and • Capable of preparing vehicle documents for vehicle owners and making appointments and arrangements for examination according to vehicle types.

Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of vehicle system servicing and occupational safety and health requirements. (This UoC replaced 108716L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Execute the maintenance procedures for electric vehicle systems
Code	111737L3
Range	This unit of competency is applicable in electrified vehicle service workshops. Practitioners should be able to master the maintenance procedures of electric vehicle systems safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to provide a written report upon completion of work.
Level	3
Credit	5 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operating principles of various electric vehicle systems and the associated circuits) • Conversant with the operating principles of various electric vehicle systems, the locations of major components and the interpretation of wiring circuit diagrams of electrical operating systems, the application of different cable and wire harness types, their protection and connection means. • Identify the normal operating conditions of various electric vehicle systems, and accurately differentiate the voltage levels of their components and cables, such as the rechargeable energy storage system (REESS), onboard charger (OBC), powertrain, heating, ventilation and air conditioning (HVAC), steering, cooling, suspension, and braking systems, etc., as well as the safety awareness. • Understand the potential hazards associated with electric vehicle system servicing according to the instructions in the corresponding vehicle manufacturer's service manual. • Master the necessary preventive and protective measures for the general services of different electric vehicle systems. • Acquainted with the requirements for service workplace set up according to the instructions in the corresponding vehicle manufacturer's service manual and the guidelines for occupational safety and health. • Master the functions and applications of various special tools and equipment for electric vehicle maintenance. • Familiar with the requirements and procedures for the maintenance of the low-voltage and high-voltage operating systems onboard, such as the steering, cooling, lighting, suspension and braking systems, powertrain, OBC, REESS, HVAC system, etc. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection.

	2. Performance (Maintenance of the operating systems onboard) • Explain the working principles of various electric vehicle systems and correctly interpret the voltage levels and operation of components from the wiring circuit diagrams of the low-voltage and high-voltage operating systems, such as the OBC, REESS, powertrain, HVAC, steering, braking, suspension, cooling, lighting, etc. • Correctly differentiate the voltage levels of various operating systems, including cables. • Identify the applications of different wire harness and cable types, and the protection of various connectors / adaptors for the electric vehicle systems. • Correctly master the general work scope of electrical system maintenance under non- isolated high-voltage circuit power conditions. • Correctly set up an isolated servicing area with barricade and warning signage for the service, and apply effective personal protective and first-aid equipment, with reference to the instructions in the corresponding vehicle manufacturer's service manual and the legal requirements of occupational safety and health, road and vehicle safety, and environmental protection, for electric vehicle system maintenance. • Conduct the proper maintenance procedures safely for the normal operating conditions of low-voltage electrical systems, including but not limited to, steering, braking, suspension, cooling and lighting, according to the instructions in the corresponding vehicle manufacturer's service manual and associated safety guidelines, with the application of proper personal protection equipment and special service tools. • Conduct the typical maintenance procedures safely for the normal operating conditions of high-voltage operating system components under isolated status, including but not limited to, powertrain, OBC, and HVAC systems, with the application of the correct special service tools and equipment, according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection. • Provide a written report on the system maintenance, focusing on the abnormalities, measurement results, actions taken and the effectiveness.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of identifying the system layouts, location, and operating principles of various electric vehicle systems and components, and correctly interpreting the voltage levels and operation of components from the wiring circuit diagrams of electrical operating systems, such as the OBC, REESS, powertrain, HVAC, steering, braking, suspension, cooling, lighting, etc.; • Capable of differentiating the voltage levels of various operating systems, the wire harness, cables and the connector / adaptor protection, as well as mastering the associated safety awareness; • Capable of identifying the general work scope of electrical system maintenance under non-isolated high-voltage circuit power conditions correctly; • Capable of conducting the proper maintenance procedures for the normal operation of low-voltage electrical systems safely, including but not limited to, steering, braking, suspension, cooling and lighting, with the application of effective personal protective and first-aid equipment, and the proper special service tools and equipment according to the instructions in the corresponding vehicle manufacturer's service manual and associated safety guidelines; • Capable of conducting the proper maintenance procedures for high-voltage operating system components under isolated status, such as the powertrain, OBC and HVAC systems, etc., safely in the designated area with the application of effective personal protective and first-aid equipment, and the proper special service tools and equipment according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of conducting functionality / performance tests safely on the electrical operating systems / components, and providing working report upon completion of work.

Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the operation of electric vehicles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Execute the diagnostic and remedial procedures for the high-voltage systems of electric vehicles and the associated safety measures
Code	111738L3
Range	This unit of competency is applicable in electric vehicle service workshops. Practitioners should be able to master the diagnostic and remedial procedures of the high-voltage operating electric vehicle systems and implement the associated safety measures according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to provide written reports upon completion of work.
Level	3
Credit	7 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structures and operating principles of various electric vehicle systems and associated risk management) • Identify the types of high-voltage batteries adopted by vehicles, their characteristics, handling procedures, and associated safety issues. • Conversant with the layout and operating principles of a rechargeable energy storage system (REESS), including major components and circuitry, its system protection and preventative measures for operational safety. • Accurately differentiate the voltage levels of the components and cables in REESS, powertrain, steering, heating, ventilation and air conditioning (HVAC) systems, the hazards and safety rules in handling of the high-voltage operating components onboard. • Good understanding of the functions and application of special service tools, including onboard diagnostic tester and insulation tester, personal protection and first-aid equipment for relevant tasks. • Master the principle of high-voltage system power down to isolate the electrical circuit connection between the high-voltage battery pack and the vehicle system components, and the criteria for power reinstatement. • Acquainted with the basic principle of whole-vehicle control logic of electric vehicles and the application of controller area network for signal transmission. • Identify the potential hazards and preventive measures associated with electric vehicle servicing according to the instructions in the corresponding vehicle manufacturer's service manual. • Understand risk assessment and the techniques for electric vehicle servicing. • Good understanding of the relevant legal requirements of occupational safety and health, road and vehicle safety, and environmental protection.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of explaining the working principles of various high-voltage operating systems onboard, and the architecture of whole-vehicle logic control and applications of controller area network;

	• Capable of applying relevant personal protective equipment and first-aid equipment, special tools and diagnostic instruments for high-voltage operating system inspection and rectification / replacement, with reference to instructions in the corresponding vehicle manufacturer's service manual and safety rules; • Capable of identifying the voltage levels of operating systems, and checking the intactness of high-voltage connectors and cables linked among high-voltage systems / components; • Capable of isolating and reinstating the high-voltage electrical system of electric vehicles safely, as well as the effectiveness of the processes, according to the instructions in the electric vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of executing the diagnostic procedures to locate the faulty functions that fail to reinstate the system circuit, and solving the problem accurately; • Capable of inspecting the normal operation and performance of various high-voltage operating systems and components onboard under isolated status, including but not limited to the powertrain, onboard charging unit, power distribution, modulation and conversion units, and HVAC systems, with reference to the instructions in the corresponding vehicle manufacturer's service manual and safety rules; • Capable of executing proper remedial actions to the faulty system / component identified in the inspection process for rehabilitating the normal operating conditions, with reference to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health, and environmental protection; • Capable of conducting safety and functional tests for the rectified items, and providing written reports upon completion of the remedial and inspection work; and • Capable of performing risk assessment and establishing the emergency rescue procedures for electric vehicle servicing, according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health and environmental protection, and provide a written report upon the completion of risk assessment and emergency rescue procedure establishment.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of high-voltage operating systems on the electric vehicles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and health

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Familiar with electric vehicle technology and the associated risk handling
Code	111739L3
Range	This unit of competency is applicable in electrified vehicle service workshops. Practitioners should be able to be acquainted with electric vehicle technology and the associated risk management of faulty electric vehicles according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to provide a written report on risk assessment, rescue and remedy actions.
Level	3
Credit	1 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Electric vehicle technology and associated risk management of faulty vehicles) • Conversant with the basic principles of electrical and electronics, including but not limited to electromagnetism, power switching and inversion. • Acquainted with the operating principles and output characteristics of power transmission, modulation and control, electromotive machines and power inverters. • Understand the operating principles and applications of multiplexing, analogue and digital devices, sensors and actuators for vehicle operation. • Good understanding of the operating principles and applications of various types of electronic control systems and related components, such as traction motor power control, battery power management, etc. • Identify the potential hazards and preventive measures associated with faulty electric vehicles according to the instructions in the corresponding vehicle manufacturer's service manual. • Good understanding of the risk assessment and techniques for dealing with faulty electric vehicles, including live working. • Identify the construction and operation of different kinds of electric vehicles, their emergency rescue and remedy procedures • Understand the relevant legal requirements on road and vehicle safety, and environmental protection.

	2. Performance (Familiar with electric vehicle technology and risk handling) • Explain the basic principles of electrical and electronics, such as electromagnetism, power switching and inversion, etc. adopted for the operation and control of electric vehicles. • Explain the basic principles of multiplexing, analogue and digital devices, sensors and actuators, their applications on the powertrain and energy management systems of electric vehicles. • Correctly differentiate the voltage levels of various operating systems onboard. • Safely perform the risk assessment for a faulty electric vehicle, and establish emergency rescue and remedy procedures according to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health and environmental protection, including but not limited to cable intact, system electrical insulation, control functions, rechargeable energy storage system and onboard charging under live working conditions, as well as the working environment. • Provide written report on the risk assessment, rescue and remedy actions.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of explaining the principles of electrical and electronics, such as electromagnetism, power switching and inversion, etc. adopted in the powertrain and energy management systems of electric vehicles; • Capable of explaining the principles of multiplexing, analogue and digital devices, sensors and actuators, as well as their applications on the control of electric vehicle systems; • Capable of performing risk assessment to allow a safe emergency rescue and remedy environment for a faulty electric vehicle under various conditions, including the failure of high-voltage system power down, according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements of road and vehicle safety, environmental protection, occupational safety and health regulations; and • Capable of providing a written report on the risk assessment, rescue and remedy actions for a faulty electric vehicle.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed comprehensive knowledge of electric vehicle operation. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and health

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Execute the maintenance and diagnostic procedures for electric motorcycle systems
Code	111740L3
Range	This unit of competency is applicable in electric motorcycle service workshops. Practitioners should be able to masterly conduct the maintenance and diagnostic procedures for the electric motorcycle systems safely with the application of suitable gears, according to the instructions in the corresponding motorcycle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to provide a written report upon completion of work.
Level	3
Credit	5 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Electric motorcycle technology and fault-finding basics, and associated safety precautions) • Conversant with the operating principles of various electric motorcycle systems, the locations of major components and the interpretation of wiring circuit diagrams of electrical operating systems, the application of different cable and wire harness types, their protection and connection means. • Identify the normal operating conditions of various electric motorcycle systems, and accurately differentiate the voltage levels of their components and cables, such as the rechargeable energy storage system (REESS), onboard charging unit, powertrain, lighting and braking systems, etc., as well as safety awareness. • Understand the potential hazards associated with high-voltage electrical operating system servicing according to the instructions in the corresponding motorcycle manufacturer's service manual. • Master the necessary preventive and protective measures for the general services and diagnosis of various high-voltage electrical operating systems. • Acquainted with the requirements for motorcycle service workplace setup according to the instructions in the corresponding motorcycle manufacturer's service manual and the guidelines for occupational safety and health. • Identify the functions and applications of various special tools and equipment for electric motorcycle maintenance and diagnosis, as well as the personal protection and first-aid equipment for relevant tasks. • Differentiate the battery pack types (swappable and fixed), equipped on an electric motorcycle, their features on performance, handling safety, etc. • Master the principle of high-voltage system power down for isolating the electrical circuit connection between the high-voltage battery pack and the vehicle system components, and the criteria for power reinstatement. • Familiar with the requirements and procedures for the maintenance and diagnosis of the low-voltage and high-voltage operating systems onboard, such as the lighting, braking and rider safety systems, powertrain, onboard charging unit, REESS, etc. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection.

	2. Performance (Maintenance and diagnosis of the high-voltage electrical operating systems of electric motorcycles) • Correctly differentiate the voltage levels of various operating systems, including cables. • Identify the applications of different wire harness and cable types, and the protection of various connectors / adaptors for the high-voltage operating systems. • Correctly master the general work scope of electrical system maintenance under non-isolated high-voltage circuit power conditions. • Masterly set up an isolated servicing area with barricade and warning signage for electric motorcycle services, with reference to the instructions in the corresponding motorcycle manufacturer's service manual and the legal requirements of occupational safety and health, road and vehicle safety, and environmental protection, for relevant electric motorcycle system maintenance and diagnosis. • Execute the proper maintenance procedures safely for the normal operating conditions of low-voltage electrical systems, including but not limited to, rider safety, braking and lighting, according to the instructions in the corresponding motorcycle manufacturer's service manual and associated safety guidelines, with the application of proper personal protection equipment and special service tools. • According to the instructions in the corresponding vehicle manufacturer's service manual and associated safety guidelines, with the application of proper personal protection equipment and special service tools, safely execute the correct isolation and reinstatement procedures for the high-voltage electrical system of an electric motorcycle, including the identification of the correct location of breaker and intact components. • Determine the effectiveness of isolation / reinstatement processes with the application of special service tools such as onboard diagnostic tester and insulation tester, and provide a written report focusing on the abnormalities and corresponding actions taken. • Conduct the diagnostic procedures to locate faulty functions that do not satisfy the criteria for system circuit reinstatement, such as high-voltage system failure, low isolation resistance, malfunctioning operating systems, defective adaptors, etc., and rectify the problem effectively. • According to the instructions in the corresponding motorcycle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, execute the typical maintenance procedures safely for the proper functions of high-voltage operating systems under isolation status that has been confirmed by the result of special service tools / authorised competent person, including the powertrain and associated cables, with the application of the correct special service tools and equipment. • According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, apply the correct special service tools and equipment to safely locate the faulty functions of the high-voltage systems and components, such as the power charging and distribution, modulation and inversion units, powertrain, etc., under isolation status, and conduct the rectification or replacement processes to rehabilitate their normal operating conditions. • Conduct the coding procedures where necessary, safety and functional tests after rectification or parts replacement. • Provide a written report on the system maintenance and inspection, focusing on the abnormalities, measurement results, actions taken and the effectiveness.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of explicating the potential hazards associated with high-voltage electrical operating system servicing and executing corresponding protective and preventive measures according to the instructions in the corresponding motorcycle manufacturer's service manual and the guidelines in occupational safety and health; • Capable of differentiating the voltage levels of various operating systems, the wire harness, cables and the connector / adaptor protection, as well as mastering associated safety awareness; • Capable of identifying the general work scope of electrical system maintenance under non-isolated high-voltage circuit power conditions correctly;

	• Capable of conducting the proper maintenance procedures for the normal operation of low-voltage electrical systems safely, including but not limited to, rider safety, braking and lighting, with the application of effective personal protective equipment, proper special service tools and equipment according to the instructions in the corresponding motorcycle manufacturer's service manual and associated safety guidelines; • Capable of isolating and reinstating the high-voltage electrical system of electric motorcycles equipping either of the battery pack type safely, as well as the effectiveness of the processes, according to the instructions in the corresponding electric motorcycle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of conducting the diagnostic procedures to locate the faulty functions that fail to reinstate the system circuit, and rectifying the problem effectively; • Capable of executing the typical maintenance procedures safely for the proper functions of high-voltage operating systems under isolated status with the application of the proper personal protection equipment and correct special service tools and equipment according to the instructions in the corresponding motorcycle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection; • Capable of locating the faulty functions of various high-voltage operating systems and components onboard under isolated status, including but not limited to the powertrain, power distribution, modulation and conversion units, with reference to the instructions in the corresponding motorcycle manufacturer's service manual and safety rules; • Capable of conducting proper remedial actions for the faulty systems / components to rehabilitate the normal operating conditions, with reference to the instructions in the corresponding motorcycle manufacturer's service manual and the requirements of occupational safety and health, and environmental protection; and • Capable of conducting safety and functional tests for the rectified items, and providing working reports upon completion of the inspection and remedial work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of electrical operating systems on motorcycles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Evaluate the performance of high-voltage operating systems and execute the maintenance procedures for the rechargeable energy storage system of electric motorcycles
Code	111741L3
Range	This unit of competency is applicable in electric motorcycle service workshops. Practitioners should be able to evaluate the performance of high-voltage operating systems and safely execute the maintenance procedures of the rechargeable energy storage system (REESS) with the application of suitable gears, according to the instructions in the corresponding motorcycle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to provide a written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements**

	1. Knowledge (Principles of various high-voltage operating systems and associated safety precautions) • Conversant with the functions, working principles and controls of various high-voltage operating systems of electric motorcycles, the locations of major components, including the application of different cable and wire harness types, and their protection and connection means. • Explain the principles of whole-vehicle control logic and communication protocols of electric motorcycles, and the application of controller area network (CAN) for signal transmission. • Identify the normal operating conditions of various electric motorcycle systems, accurately differentiate the voltage levels of their components and cables, such as the REESS, onboard charging unit, powertrain, etc., and master the associated safety precautions in maintenance. • Familiar with the potential hazards, preventive and protective measures for live high-voltage electrical system servicing and diagnosing, such as the setting-up of workplace, application of personal protection and first-aid equipment, special tools and equipment, competency of operators, etc., according to the instructions in the corresponding motorcycle manufacturer's service manual and safety guidelines. • Master the requirements for electric motorcycle service workplace setup, functions and applications of various special tools and equipment for electric motorcycle maintenance and diagnosis, as well as the personal protection and first-aid equipment for relevant tasks. • Familiar with the common faults of high-voltage operating systems onboard, and the diagnostic procedures for the faulty functions, including but not limited to, the powertrain and REESS of the electric motorcycle, with reference to the instructions in the corresponding motorcycle manufacturer's service manual and safety rules. • Master the features of various battery types equipped on an electric motorcycle, such as the basic working principles, characteristics, performance, handling safety, etc. • Master the principle of high-voltage system power down to isolate the electrical circuit connection between the high-voltage battery pack and the vehicle system components, and the criteria for power reinstatement. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of illustrating the working principles and architecture of the whole-vehicle logic control and communication protocols for signal transmission, and the application in electric motorcycles; • Capable of explicating the potential hazards of live high-voltage electrical system servicing and diagnosing, and executing relevant protective and preventive measures according to the instructions in the corresponding motorcycle manufacturer's service manual and the guidelines in occupational safety and health; • Capable of differentiating the voltage levels of various operating systems, the wire harness, cables and the connector / adaptor protection, as well as mastering the associated safety precautions; • Capable of examining the normal operation of high-voltage electrical systems under live working conditions safely, including but not limited to, powertrain, onboard charging unit and REESS, with the application of effective personal protective equipment, and proper special service tools and equipment according to the instructions in the corresponding motorcycle manufacturer's service manual and associated safety guidelines; • Capable of identifying the causes of defective high-voltage operating systems, such as the powertrain, REESS, etc., to locate the faulty components leading to the substandard system performance and conduct rectification, with reference to the instructions in the corresponding motorcycle manufacturer's service manual and the guidelines in occupational safety and health; • Capable of conducting the removal and one-for-one replacement procedures of the fixed type and swappable type high-voltage battery pack properly, including the cables and harness, according to the instructions in the manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations, after the system power-down is confirmed by the result of special service tools / authorised competent person;

	• Capable of executing the coding procedures for the fixed type high-voltage battery pack correctly, after the high-voltage power system is reinstated; and • Capable of executing safety and functional tests, and providing working reports upon completion of replacement work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed good knowledge of the high-voltage operating system and battery pack on electric motorcycles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Rebuild the cabin upholstery in classic car
Code	111742L3
Range	This unit of competency is applicable in vehicle body servicing workshops. Practitioners should be identifying the damages of the cabin upholstery in classic car and rebuild the damages according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. Providing written report after the work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The damages of the cabin upholstery in classic car and the rebuild procedure) • Be familiar with the general damages of the cabin upholstery in classic car. • Be familiar with the rebuild procedure, accessories can be use, special tools and their operating method. • Understand the relevant legal requirements on road and vehicle safety and environmental protection. 2. Performance (Conduct diagnosis and rebuild procedure of the damages of the cabin upholstery in classic car) • Conduct diagnosis on the damages of the cabin upholstery in classic.car • Rebuild the damaged of the cabin upholstery in classic car according to the instructions in the vehicle manufacturer's servicing manual and the relevant legal requirements on road and vehicle safety and environmental protection. • Final check the cabin upholstery in classic car is meets the requirements in the vehicle manufacturer's servicing manual and the relevant legal requirements on road and vehicle safety • Provide written report focusing on: ◦ Damages condition ◦ Major decision
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of masterly conducting diagnosis on the damages of the cabin upholstery in classic car according to the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations; and • Capable of masterly conducting rebuild procedure according to the instructions in the vehicle manufacturer's servicing manual and the relevant legal requirements on road and vehicle safety • Capable of providing written reports after the work
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of vehicle body construction and know how to use vehicle body repair instruments.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Restore the power unit performance of a classic car
Code	111743L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to restore the performance of the power unit for a classic car safely and effectively with reference to the guidelines in the corresponding vehicle manufacturer's service data and according to the legal requirements on road and vehicle safety, environmental protection, occupational safety and health regulations. They should also be able to provide a written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principle of power unit and associated components) • Conversant with the structure and operating principle of the power unit and associated components, including but limited to, engine, lubrication, cooling, ignition, fuel metering, air intake, exhaust, starting and charging systems. • Master the effects of the major systems/components on the power unit performance. • Master the removal and replacement procedures, testing and tuning techniques for examining and restoring the power unit components and associated systems with reference to the guidelines in the corresponding vehicle manufacturer's service data. • Familiar with the special service tools and test equipment for removing, replacing, testing and tuning the associated systems/components. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection.

	2. Performance (Restore the performance of the power unit for a classic car) • With reference to the guidelines in the corresponding vehicle manufacturer's service data, the requirements of occupational safety and health as well as that of environmental protection, apply the correct procedures to examine the conditions of the power unit and associated systems/components using suitable service tools and test equipment, such as: ◦ Stability of engine running, ignition timings, carbon dioxide and hydrocarbon concentrations in tail pipe exhaust over the entire engine operating ranges ◦ Compression pressures of cylinders and the condition of lubricant in the engine ◦ Accelerator cable, throttle control linkages of carburettor and fuel hoses, synchronisation of carburettor operation (for multi-carburettor system only) ◦ Radiator efficiency, engine thermal control and coolant hoses ◦ Electrical wire harness of ignition, starting and charging systems • Execute intensive investigation into the systems/components of substandard examination results to identify the system maladjustments or degraded parts for restoration, such as maladjusted valve clearance, ignition timing and air-fuel ratio, worn or defective engine proper and ignition system, excessive carbon deposit in the carburettor, air intake and exhaust paths, inefficient fuel supply system and cooling system, etc. • Execute intensive checks on the components of carburettor, such as throttle, control linkages, nozzles and accelerating pump, etc. • Execute intensive checks on the engine-related electrical systems. • Masterly restore all the defects identified in examination with appropriate procedures, technique and replacement parts. • Precisely conduct system adjustments to resume the engine performance, such as the valve timing and tappet clearance, ignition timing, air-fuel ratio tuning, and synchronisation of throttle opening (for multi-carburettor system only). • Conduct safety and performance inspection after completion of restoration and provide written report focusing on the abnormality found, data measured, major decision made, the action taken and its effectiveness.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of applying correct procedures to identify the root causes of performance deficiency of the power unit of the classic car using appropriate service tools and test equipment, with reference to the guidelines in the corresponding vehicle service data and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of executing the restoration and tuning procedures masterly to resume the normal operation of the power unit; and • Capable of conducting safety and performance inspections after power unit restoration and providing written report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge and rich experience in the service of traditional internal combustion engine vehicles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational Safety and Health Ordinance • Air Pollution Control Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Sales Techniques for New Energy Vehicles
Code	111777L3
Range	This unit of the competencies is applicable for automotive sales practitioners to effectively sell various New Energy Vehicles (NEVs), including Battery Electric Vehicles (BEVs), Plug-in Hybrid Electric Vehicles (PHEVs), and Hydrogen Fuel Cell Vehicles (FCEVs). It involves applying specialized technical knowledge of NEV systems, understanding government policies and incentives, and using advanced consultative sales techniques to address customer needs, overcome objections related to new technology, and manage the end-to-end sales process. The unit emphasizes a customer-centric approach that educates and builds confidence in NEV ownership. This unit is directly applicable to practitioners working in roles such as: Automotive Sales Consultant / Executive Product Specialist (NEV) Fleet Sales Representative (with an NEV focus)
Level	3
Credit	4 *(For Reference Only)*
Competency	**Performance Requirements** 1. Performance Requirement 2. Knowledge(NEV Technology and Advanced Consultative Sales Technique) • Understanding NEV Technologies and Components ◦ The fundamental differences between BEV, PHEV, and FCEV powertrains. ◦ Key terminology: kWh battery capacity, kW motor power, WLTP range, regenerative braking, and charging power (AC vs. DC). ◦ Basic understanding of the battery technology, such as the lithium-ion battery and solid-state, battery, including factors affecting lifespan and performance. • Familiar with charging Infrastructure and Procedures ◦ Types of charging: Standard (AC) vs. Rapid (DC) charging. ◦ Common connector types (e.g., Type 2, CCS Combo, CHAdeMO) and their compatibility. ◦ Location, access, and payment methods for major public charging networks in Hong Kong. ◦ The process and considerations for installation of EV charging-enabling infrastructure ("EVCEI") in car parks of existing private residential buildings • Familiar with government Policies, Incentives, and Regulations ◦ Detailed knowledge of the Hong Kong EV Roadmap and relevant government initiatives. ◦ Environmental benefits aligned with Hong Kong's carbon neutrality goals. • Familiar with financial and Ownership Aspects ◦ Calculation of total cost of ownership (purchase price, charging costs, maintenance, insurance, residual value). ◦ Available financing options and any green loans specific to NEVs. ◦ Understanding of NEV-specific insurance considerations.

	3. Performance (Present and Demonstrate NEV Features)
	• Prepare for NEV-Specific Sales Engagement
	  ◦ Research and stay updated on the latest NEV models, their specifications, and competitor offerings.
	  ◦ Prepare demonstration tools and resources (e.g., battery display units, charging cable kits, app guides).
	  ◦ Ensure demonstration vehicles are adequately charged and presentable.
	• Conduct a Consultative Customer Needs Analysis
	  ◦ Use probing questions to identify the customer's driving patterns, lifestyle, and environmental concerns.
	  ◦ Assess the customer's current understanding and potential anxieties about NEVs (e.g., range, charging, cost).
	  ◦ Determine the suitability of the customer's home or workplace for charging installation.
	• Present and Demonstrate NEV Features Effectively
	  ◦ Clearly explain the operation, benefits, and limitations of key NEV systems (electric motor, battery, regenerative braking).
	  ◦ Articulate the economic benefits, including lower running costs (fuel/electricity), maintenance savings, and government incentives.
	  ◦ Conduct a dynamic test drive that highlights unique NEV features like instant torque, quiet operation, and regenerative braking.
	  ◦ Demonstrate the charging process, types of connectors, and the use of public charging networks and associated mobile apps.
	• Overcome Objections and Build Confidence
	  ◦ Address common concerns such as "range anxiety" by relating range to real-world driving scenarios and the expanding charging infrastructure.
	  ◦ Explain battery warranty, lifespan, and degradation in a transparent and reassuring manner.
	  ◦ Clarify the total cost of ownership versus the initial purchase price.
	• Manage the Sales and Handover Process
	  ◦ Accurately calculate and explain available government subsidies and tax concessions (e.g., the First Registration Tax (FRT) Concession for EVs in Hong Kong).
	  ◦ Coordinate with internal teams to arrange home charging assessment or installation.
	  ◦ Conduct a comprehensive vehicle handover, ensuring the customer is confident in operating the vehicle's core and connected features.
	  ◦ Facilitate the post-sale relationship, including introducing after-sales service schedules specific to NEVs.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is • Ability to accurately articulate technical features of NEVs and prepare relevant sales materials on NEV technologies, charging, and government policies. Collection of prepared sales aids and competitor comparison sheets. • Ability to conduct a structured conversation to uncover customer needs, lifestyle fit, and concerns regarding NEVs. Simulated Role-play / Direct Product Presentation & Demonstration. • Ability to deliver a compelling and informative presentation and test drive, highlighting the unique benefits of an NEV. • Ability to respond to common NEV objections (e.g., range, charging, cost) confidently, accurately, and reassuringly. • Prepare a full cost calculation and handover plan.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed basic knowledge on vehicle sales.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Arrange vehicle test drives for customers' interests
Code	111778L3
Range	This unit of competency is applicable in vehicle sales and service centres. Practitioners should be able to provide and arrange vehicle test drives for the interests of customers in different scenarios according to the guidelines and instructions, and provide written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Basic knowledge of test drive arrangement) • Good understanding of vehicle inspection, receipt and dispatch procedure as well as transportation requirements. • Master the respective local legislative provisions and insurance issues on the requirements of driving a vehicle without a normal licence and the rules for using a temporary vehicle licence. • Good understanding of the operating principles of various vehicle systems. • Master the normal characteristics and performance of respective vehicles as well as the operation and application of various systems and equipment onboard. • Good understanding of the relevant legal requirements on occupational safety and health, road and vehicle safety, and environmental protection. 2. Performance (Arrange vehicle test drives for the interests of customers) • Prepare required documents to facilitate vehicle test drive for customers' interests. • Implement the procedures of vehicle test drives by customers, highly attend to traffic safety and the requirements of occupational safety and health, as well as that of environmental protection. • Fully understand the customers' expectations of the test drive experience. • Identify the claimed defects of the customer, such as abnormal noise, vibration and performance deficiencies, etc., through the test drive. • Explain to customers the normal characteristics and performance of respective vehicles as well as the operation and application of various systems and equipment onboard. • Provide written report on the feedback of the customer and findings from the test drive upon completion of work.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of arranging vehicle test drives for customers and preparing the required documents; • Capable of identifying the claimed defects of the customer through the test drives; • Capable of explaining the normal characteristics and performance of respective vehicles as well as the operation and application of various systems and equipment to customers; and • Capable of providing a written report on the feedback of the customer and findings from the test drive upon completion of work.

Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of vehicle servicing and testing, and the capability to drive vehicles and receive customers. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational, Health and Safety Ordinance (This UoC replaced 108578L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Develop procedures for various forms of payment
Code	108559L4
Range	In the financial management department of the automotive industry, practitioners should be able to develop a set of handling procedures for various forms of payment to protect the interests of institutions and customers.
Level	4
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Different forms of payments and transaction documents)
	• Good understanding of the different payment methods, such as:
	  ○ cash, credit card, check, transfer, etc.
	  ○ bookkeeping, deposit, instalments.
	• Master the technique of identifying counterfeit currency.
	• Be familiar with the financial document monitoring system.
	2. Performance (Develop Procedures for various forms of payment)
	• Develop Procedures for various forms of payment and handling procedures, such as:
	  ○ Cash (currency exchange and identification, including counterfeit banknotes)
	  ○ Electronic currency (validation of validity)
	  ○ Credit card (validity, signature verification)
	  ○ Cheque (accuracy of information)
	  ○ bookkeeping (validity of account and its signature, maximum billing amount)
	  ○ Deposit (minimum setting and expiration)
	• Develop the content of payment documents and issuing procedures.
	• Develop a financial document monitoring system.
	• Develop emergency contingency procedures, such as failing to identify the authenticity of the currency.
	• Review the handling procedures for various forms of payment and feedback from frontline staff. Revise the procedures to optimize processing efficiency and accuracy.
	• Join other forms of payment with the market to improve the cost-effectiveness.

Assessment Criteria	The integrated outcome requirements of this unit of competency is that the practitioner being assessed shall prove that he/she is： • Capable of formulating integrated procedures and contingency responses in accordance with various payment methods prevailing in the market to protect the interests of all parties; and • Capable of reviewing the handling procedures of various payment forms to match the changes in institutional policies and the market development needs to enhance the cost-effectiveness of the organization and the convenience of customers.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Implement financial management
Code	108560L4
Range	In operation management workplaces of the automotive industry, practitioners should be able to effectively implement financial management plans to control expenditure and prepare budget, report and evaluate information/data relating to cost, expenditure and profits, as to enhance cost effectiveness of the management of the outlet/organisation.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Financial Management) • Good understanding of accounting knowledge for limited liability company. • Master the organisation's principle and procedure of internal audit. • Good understanding of the concept of financial management, including the knowledge of foreign currencies. • Good understanding of the concept of risk management. • Master the Government's tax policy on vehicles. • Good understanding of the application of information technology.

	2. Performance (Implement industry-related financial management)
	• Compile comprehensive financial statement, including:
	  ○ Comprehensive balance sheets
	  ○ Comprehensive profit and loss statements
	  ○ Comprehensive cash flow statements
	• Control expenditure, such as:
	  ○ Staff expenses
	  ○ Wear and tear
	  ○ Daily expenses of the outlet / organisation
	• Conduct internal audit for the organisation.
	• Estimate risks and returns, such as the risks and returns of foreign currencies.
	• Analyse financial data and set budget, such as:
	  ○ Set budget for the outlet/organisation
	  ▪ Set budget according to the business turnover and expenditure of the previous year
	  ▪ Set annual business turnover and estimate expenditure
	  ○ Compile business turnover reports:
	  ▪ Weekly estimates on business turnover
	  ▪ Submit weekly business turnover report
	  ▪ Submit report on the accumulated business turnover for the current month
	  ▪ Compare the business turnover with that of last month/last season/last year
	  ▪ Compare the estimated business turnover
	• Apply information technology on financial management.
	• Effectively implement risk management.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall be: • Capable of grasping the account, financial budget and internal audit of the organisation; and • Capable of adopting information technology and risk management on financial management to effectively implement the financial management plan so as to enhance cost effectiveness of the management of the outlet/organisation
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Appraise staff performance and professional knowledge
Code	108568L4
Range	This unit of competency is applicable to workplaces of the automotive industry. Practitioners should be able to understand the scope of work and the required performance standard of their subordinates. They should also be capable of conducting appraisal on the performance of their subordinates and writing appraisal report objectively.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The criteria for performance appraisal) • Good understanding of the functional areas of the department to which one belongs to and the staff appraisal system of the organisation. • Understand that staff performance is composed of working attitude, competency level, degree of diligence and records of achievement. • Master the scope of work and the expected performance standard of subordinates. • Good understanding of the criteria for staff's performance appraisal. 2. Performance (Appraise staff performance) • Communicate with staffs about the objectives, plans and standard of the department so as to arrive at a mutually agreed staff performance standard. • Continually monitor staff performance during daily operation according to the objectives and standard of the department in the organisation. • Conduct specific competency assessments, such as good operation trade test, examination and internal assessment specified by vehicle manufacturer. • Appraise staff performance during specific periods according to the appraisal procedures of the organisation and job requirements; and referring to staff record of continuing study in industry-related subjects when writing appraisal reports and make suggestions for improvement when necessary.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the composition of staff performance and appraisal criteria according to the appraisal procedure; and objectively conduct assessment on staff performance according to their performance during relevant periods; and • Capable of writing staff appraisal reports and providing suggestion for improvement when necessary.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Draw up staff training programme
Code	108569L4
Range	This unit of competency is applicable to the human resources department in the automotive industry. Practitioners should be able of draw up staff training programme that is suitable for the organisation so as to meet the needs of human resources in different departments in the foreseeable future.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The competency requirements of different departments in the organisation) • Master the structure of the organisation and the functions of different departments. • Good understanding of the basic theory of human resources management. • Master the competency requirements of different posts. • Good understanding of about the professional qualifications approved by the government, such as Vehicle Mechanics Registration Scheme, trade test for the automotive industry and Registered Professional Engineers. • Good understanding of the details of the Apprenticeship Ordinance and the rights and obligations of all parties concerned; and understand the training schemes approved by the Government, such as courses for craftsmen and technicians as well as Skills Upgrading Scheme for automotive industry. • Good understanding of the Bachelor-Degree Course in Engineering and Engineering Graduate Training Scheme approved by the government. • Master the technical level and training requirements for technicians specified by vehicle manufacturers. 2. Performance (Draw up staff training programme) • Assess the competency level of current staff according to existing human resources. • Assess the needs of human resources in the foreseeable future according to the development of the automotive industry. • Analyse competency requirements of departmental staff. • Analyse the discrepancy between the competency of current staffs and expected competency requirements to determine the training items, choice of staffs and priority setting. • Draw up training items according to the internal succession/promotion scheme of the organisation. • Select suitable training modes according to the specific requirements of the department, internal training competency, characteristics of expected competency requirements and the demand of the training market, such as internal training, part-time study and on-job training; or participate in Apprenticeship Scheme and Engineering Graduate Training Scheme. • Ensure adequate supply of training resources and the normal functioning of departments during the training period. • Assess training results and review the effectiveness. • Promote the training of environmental protection operation to the enterprise and the staffs.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioners being assessed shall be: • Capable of assessing and analysing the discrepancy between the competency of current staffs and expected competency requirements to determine the training items and staff selection; and draw up staff training programme that is suitable for the organisation to meet the needs of different departments and the development of the automotive industry; • Capable of selecting suitable training modes, ensuring adequate supply of training resources, and maintaining normal operation of departments during the training period; and • Capable of assessing the training results and reviewing its effectiveness.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Arrange filling of job vacancies
Code	108570L4
Range	This unit of competency is applicable to the human resources department of the organisations in the automotive industry. Practitioners should be able to implement relevant procedures to arrange the most suitable persons filling the job vacancies according to job duties.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The concept of human resources) • Master the structure of the organisation and the functions of different departments. • Good understanding of the basic theory of human resources management. • Good understanding of the recruitment procedures for human resources. • Good understanding of the screening procedure for candidates and the points to note. • Good understanding of the professional qualifications approved by the Government, such as Vehicle Mechanics Registration Scheme, trade test for the automotive industry and Registered Professional Engineers. • Good understanding of the details of the Apprenticeship Ordinance and the rights and obligations of all parties concerned; and understand the training schemes approved by the Government, such as courses for craftsmen and technicians as well as Skills Upgrading Scheme for automotive industry. • Good understanding of the Bachelor-Degree Course in Engineering and Engineering Graduate Training Scheme approved by the government. • Good understanding of the levels and training requirements of technical staff specified by vehicle manufacturers.

	2. Performance (Implement the procedure for filling job vacancies) • List out the competency requirements of the job vacancies according to post titles and job duties, such as physical requirement, working experience, education level and industry-related professional qualifications e.g. craftsmen, technicians and engineers. • Know the human resources market situation within the automotive industry and organisational internal conditions to facilitate selection between internal promotion and external recruitment. Determine the appropriate recruitment method. • Determine screening modes, arrange interviews, prepare examinations on vehicle knowledge, trade tests and compile related documents according to the established competency requirements of the posts. • Determine screening procedure and conduct preliminary screening whenever necessary. • Arrange examination and facilitate its smooth progress to establish the priority of selected candidates. • Verify the accuracy of qualifications of candidates. • Negotiate with candidates on the terms of employment or promotion; and implement related procedures. • Ensure that the special professional posts should be filled with candidates of relevant professional qualifications that meet statutory requirements. • Ensure that employment conditions fulfil the requirements of local labour ordinances.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioners being assessed shall prove that he/she is: • Capable of choosing between internal promotion and external recruitment according to the job duties of the vacancies and the required competency; • Capable of establishing screening modes, determining screening procedure and arranging examinations; • Capable of verifying the qualifications of candidates and negotiating with candidates on the terms of employment and promotion; and • Capable of employing and promoting suitable employees with employment conditions meeting the requirements of local labour ordinances.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Purchase new vehicles
Code	108584L4
Range	This unit of competency is applicable to the merchandisers in the department of vehicle sale. Practitioners should be able to make purchase orders of new vehicles that can meet market demand according to organisational purchasing strategy, including the style and quantity of vehicles as well as qualified accessories to match with organisational operation and development.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The characteristics of vehicles and actual market situation) • Master the latest information of different vehicle types, such as characteristics, market price and demand. • Good understanding of needs and purchasing power of customers. • Good understanding of the models of product to be provided by vehicle manufacturers. • Good understanding of the specification of vehicles and the regulations governing the sale of vehicles. • Master the purchasing procedure for vehicles and the handling of respective documents. • Good understanding of the market positioning of the organisation and its affordable resources and risks. • Good understanding of the factors affecting the purchasing quantity, such as economic condition, the customers' acceptability of the vehicle brand, track record on sale, customer feedbacks on exhibitions or promotion activities, and the movements of same level competitors. • Master local requirements on vehicle specification and regulations on sale.

	2. Performance (Purchase new vehicles) • Liaise with vehicle manufacturer to provide information actively on the regulations and environmental requirements of Hong Kong. • Close contact with the vehicle manufacturer to acquire the marketing strategy of the vehicle brand and the positioning of the product; and request developing suitable vehicle model for Hong Kong market. • Negotiate for best terms and conditions of product supply to fit organisational interests with the manufacturer, such as price, product supply period and the least supplying quantity. • According to established purchasing strategy, make purchase order of new vehicle in terms of style and quantity that meet market demand, such as the category and performance of vehicle, body colour, engine capacity and category, transmission system, vehicle upholstery and accessories. • Apply from senior management for the capital required, and fix the exchange rate beforehand accordingly. • Purchase approved accessories or value-added facilities that meet the specifications of the manufacturer from local factory. • Complete import and transaction documents as well as internal documentary records according to relevant regulations governing the sale of vehicles. • Provide relevant information to the sales and marketing department for the planning of promotion activities. • Apply the established contingency procedures to cope with special incidents, such as shortage of supply or sudden change of exchange rate. • Notify the sales department, maintenance department and parts department, etc. for the advance respective preparation and corresponding measures. • Review the effectiveness of the purchasing procedure, and be capable of making suggestions for adjustment and improvement.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of making purchase order of new vehicles that can meet market demand according to established purchasing strategy, including the style and quantity of vehicles, to meet organisational operation and development; • Capable of making purchase order of qualified products from local market according to the items of accessories approved by the manufacturer; • Capable of coping with special incidents according to established organisational contingency procedures; and • Capable of making suggestions to optimise the respective procedures according to the effectiveness in the purchase of vehicles.
Remark	The credits value of this unit of competency assumes that the practitioner concerned has already possessed the knowledge of purchasing, vehicles and relevant regulations.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate marketing plans
Code	108592L4
Range	In the automotive market-related workplaces, practitioners are able to analyze the automotive market, develop a systematic marketing plan, increase the visibility of the organization, promote their automotive products and services, and develop performance indicators.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The operation of marketing and the sales systems for vehicles) • Good understanding of the operation concept of marketing and the sales systems for vehicles and make basic analysis on different markets to determine the marketing and sales methods to be adopted. • Good understanding of the brand trend of the vehicle manufacturer, product positioning and the guidelines on promotion methods. • Good understanding of the market direction requirements of the organisation. • Good understanding of the characteristics and costs of various marketing media (such as car magazines, TV commercials, car fairse.) 2. Performance (Formulate marketing plans and performance indicators) • Communicate with vehicle manufacturing factory to get an understanding of the trend of the vehicle brand, product positioning and instructions on marketing methods. • Communicate with the sales department and maintenance department to get an understanding of local market demand and the support affordable by the organisation. • Discuss and formulate sales strategy and price. • Formulate effective and comprehensive marketing plans: ◦ Capable of extending the market and absorb new customers apart from identifying old customers as target customers ◦ Formulate marketing portfolio according to the organisation's financial situation and prepared budget and set priorities ◦ Choose suitable media to launch marketing strategy ◦ Assess marketing results ▪ Be aware of the effectiveness of marketing plans and respective information so to analyse and formulate future marketing plans • Develop and manage the coordination of the entire promotion plan, make assessments and distribute them to various departments. • Develop marketing strategies for different targets, plans and performance indicators according to the objectives of the organization • Develop marketing performance indicators • Assess marketing effectiveness

Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of communicating with the vehicle manufacturer and various departments of the organisation to formulate vehicle promotion plans to meet the market development plans, financial budget and strategies of the organization, enhancing the visibility of the organization, enlarging the market share, analysing respective marketing plans and, reporting to seniors.
Remark	The credits value of this unit of competency assumes that the practitioner concerned are familiar with the market trend of vehicle products/ service and are equipped with promotion techniques.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Establish procedures for the receipt, dispatch and delivery of vehicles
Code	108599L4
Range	This unit of competency is applicable to the practitioners of vehicle purchasing and monitoring department for the establishment of effective procedures in the receipt, dispatch and delivery of vehicles, and effectiveness review, to enable the vehicles arrive the destinations accurately, safely and speedily.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of vehicles and their transportation devices) • Good understanding of the characteristics of different vehicles as well as the delivery and protection requirements. • Identify the applicability of transportation devices for vehicles. • Good understanding of respective regulations and insurance arrangement on the delivery of vehicles. • Good understanding of the receipt, dispatch and delivery methods for various kinds of vehicles. • Good understanding of the procedure for handling the import and export of commodities

	2. Performance (Establish procedures for the receipt, dispatch and delivery of vehicles)
	• Formulate the documentary system for the receipt, dispatch and delivery of vehicles, including the legislated customs clearance and customs entry documents (e.g. Import Licence and Removal Permit.).
	• Devise vehicle labelling system.
	• Establish the verification procedure for the receipt and dispatch of vehicles at different sites, such as:
	  ○ Container terminals
	  ○ Warehouses
	  ○ Vehicle Pre-delivery Inspection (PDI) workshops
	  ○ Showrooms
	• Establish the insurance arrangement for vehicle delivery, including insurance for the vehicles, the deliverer, third party and property.
	• Choose different transportation methods according to the characteristics of different kinds of vehicles, such as driving, cart or tow.
	• Establish respective procedures according to the transportation methods of different kinds of vehicles, such as:
	  ○ The requirements on the driver qualifications, and the check list prior to delivery operation.
	  ○ Instructions on transportation device selection, and the methods of fixing the vehicles onto the transportation device.
	  ○ Selection of devices for towing, and instructions on the delivery process
	• Select suitable route (including contingency route) according to the types of vehicles and the destinations
	• Establish the procedure for contingency measures, such as in the event of accident or vehicle damaged.
	• Establish the performance indicators for the delivery of vehicles.
	• Review the effectiveness of the procedures for the receipt, dispatch and delivery of vehicles as well as feedback from front-line staff; revise respective procedures to optimise efficiency and accuracy.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of establishing instructions on the procedures for effective receipt, dispatch and delivery of vehicles according to the characteristics of vehicles and delivery requirements, and handling of relevant documents; • Capable of establishing the performance indicators for the receipt, dispatch and delivery of vehicles; and • Capable of reviewing the effectiveness of the procedures for the receipt, dispatch and delivery of vehicles as well as collecting feedback from front-line staff to improve respective procedures.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed basic knowledge on logistics.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Establish and manage the documentary system for the sale of auto parts and accessories
Code	108608L4
Range	This unit of competency is applicable to the practitioners in the auto parts and accessories sales department for the effective establishment and management of sales documentary system and related inventorial documents or software, to optimise the use of organisational resources and monitor operation efficiency.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Sales of parts and accessories, use of computer for word processing) • Good understanding of the types and names of auto parts and accessories. • Master the sales pattern and procedure of organisation. • Good understanding of general knowledge of sales management and operation. • Be familiar with the documentary systems used by various departments in the organisation. • Master the ERP or relevant software employed by the organisation. • Be familiar with the general word processing techniques. 2. Performance (Establish and manage the sales documentary system) • Apply the Enterprise Resource Planning (ERP) or relevant software designated by the organisation to establish the recording and monitoring documents required for sales operation, such as: ◦ The transaction records for various sales items, including invoices ◦ The records of accounts and cash balance of the sales department ◦ The records of orders of purchase and respective implementation procedure ◦ The records of return of purchase and respective implementation procedure ◦ Receipt and dispatch records of parts and accessories ◦ The inventory record of the sales department ◦ Monitor and control of various operations such as sales and transactions. • Monitor the use of software to ensure normal operation, and submit report regularly. • Establish measures to backup information, and design temporary trading vouchers or bills in case of emergency. • Establish the contingency measures to cope with situations such as loss of information or malfunction etc. due to computer or software failure. • Review the effectiveness of the sales documentary system and feedback from front-line colleagues, revise respective procedures to optimise operation efficiency.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of developing records and monitoring documents required for auto parts sales based on the file system selected by the organization to improve operational efficiency;

	• Capable of effectively managing the operation of the documents and software relating to inventory in accordance with the file system designated by the organisation to ensure normal operation; and • Capable of reviewing the effectiveness of the parts sales documentation system, feedback from frontline colleagues, and revising the procedures to optimize operational efficiency.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed general knowledge of auto parts and accessories as well as the knowledge of sales management.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Establish the procedures for the receipt, dispatch and delivery of parts and accessories
Code	108613L4
Range	This unit of competency is applicable to the practitioners of the departments of auto parts and accessories sale, inventory control and management, purchase monitoring and warehouse management for establishment of effective procedures in the receipt, dispatch and delivery of goods, and the review of their effectiveness, to facilitate the arrival of goods to the destination accurately, safely and speedily.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories as well as related transportation devices) • Good understanding of the characteristics of auto parts and accessories as well as the requirements on protection measures. • Identify the applicability of different transportation devices. • Good understanding of the methods of receipt and dispatch for various kinds of goods. • Good understanding of the procedure for handling of import and export commodities. 2. Performance (Establish the procedures for the receipt, dispatch and delivery of parts and accessories) • Establish the labelling system for auto parts and accessories. • Establish the documentary system for the receipt and dispatch of parts and accessories, including the customs clearance and entry documents required by legislation. • Establish the verification procedure for the receipt and dispatch of auto parts and accessories at different locations, such as: ◦ airports, container terminals, etc. ◦ warehouses ◦ servicing workshops ◦ retailing points • Formulate the protection specification, modes and procedure of delivery according to the characteristics of various auto parts and accessories. • Select the suitable transportation routes (including contingency routes) according to the categories and characteristics of auto parts and accessories, and the delivery area. • Establish contingency measures for accidents, damages. • Establish the performance indicator of the receipt, dispatch and delivery of auto parts and accessories. • Review the effectiveness of the receipt, dispatch and delivery of auto parts and accessories with consideration of feedback from front-line staff; revise relevant procedures to optimise the efficiencies of receipt, dispatch and delivery.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of establishing the documentary system for the receipt, dispatch and delivery as well as the import and export of auto parts and accessories according to relevant requirements of the organisation and related government departments; • Capable of formulating effective protection measures, transportation route and procedure for the receipt, dispatch and delivery of auto parts and accessories, according to their characteristics and transportation requirements; and • Capable of improving the receipt, dispatch and delivery methods of auto parts and accessories according to relevant performance indicators and feedback from front-line staff.
Remark	The credits value of this unit of competency assumes that the practitioner concerned already has possessed basic knowledge of auto parts and accessories as well as logistics.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Monitor the delivery process of parts and accessories
Code	108614L4
Range	This unit of competency is applicable to the practitioners of the departments of auto parts and accessories sale, inventory control and management, and purchase monitoring for effective surveillance of parts and accessories logistics to accomplish the delivery process accurately and speedily.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of parts and accessories as well as the logistic monitoring systems) • Good understanding of the characteristics of parts and accessories as well as the delivery requirements. • Good understanding of the labelling system of organisation for parts and accessories, and its characteristics. • Be familiar with the characteristics of different transportation devices. • Be familiar with the operating method of various kinds of logistic monitoring systems, such as the use of monitoring devices, e.g. satellite positioning, internet, telephone, log book. • Good understanding of the established monitoring procedure for goods delivery. 2. Performance (Monitor the delivery of parts and accessories) • Use suitable implementation method according to the instructions of the monitoring system for goods delivery: ◦ Monitor and record the logistic process ◦ Communicate internally, and release messages externally (for clients) ◦ Contingency measures for cases such as monitoring system failure, communication hurdle, change of delivery plan or fall short of progress, etc. • Review the efficiency of work and make suggestions to improve the logistic monitoring system according to the performance indicator of the monitoring system for the delivery of goods. • Compile report to reflect procedural deficiency to seniors or respective counterparts according to the effectiveness of logistic operations and make suggestions to improve the delivery process.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of taking effective measures to monitor the delivery process of parts and accessories according to the established instructions of the monitoring system for goods delivery to accomplish the work process accurately and speedily; • Capable of reporting to seniors or respective staff immediately on the contingency measures taken, such as parts and accessories delivery falls short of progress; and • Capable of making suggestions to improve the methods of logistic monitoring according to the results of parts and accessories monitoring and reflecting procedural deficiency of logistic operations to seniors or respective counterparts.

Remark	The credits value of this unit of competency assumes that the practitioner has already possessed basic knowledge on logistics.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Manage the documentary system for auto parts and accessories inventory
Code	108615L4
Range	This unit of competency is applicable to the practitioners of inventory control and management department for effectively managing the inventorial documents and software to ensure normal supply of parts and accessories.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Auto parts and accessories inventory, use of computer and word processing) • Good understanding of the types and names of auto parts and accessories. • Good understanding of the method to handle inventory items in the organisation. • Good understanding of the general knowledge of inventory management and warehouse operation. • Be familiar with the filing systems used by various departments in the organisation. • Master the use of Enterprise Resources Planning (ERP) software or relevant software employed by the organisation. • Be familiar with general word processing techniques.

	2. Performance (Manage the documentary system for inventory)
	• Apply ERP or relevant software designated by the organisation to record and monitor related tasks, such as:
	  ◦ The records of the inventory level of various kinds of parts and accessories and their changes
	  ◦ The records of condemned items and respective implementation procedure
	  ◦ The records of return of purchase and respective implementation procedure
	  ◦ The records of storage and retrieval of parts and accessories
	  ◦ The records of receipt, dispatch and delivery of parts and accessories, and relevant monitoring record
	  ◦ The purchasing price of various parts and accessories
	  ◦ The reports of various transactions or related actions
	  ◦ The monitoring and control of various operations, such as inventory and transaction.
	• Monitor the use of software to ensure normal operation and submit report regularly.
	• Establish measures to backup information and design temporary trading vouchers or bills in case of emergency.
	• Devise sample documents regarding the receipt and dispatch, condemnation, inventory level, return of purchase, etc. of various kinds of parts and accessories; and formulate perfect instructions on the document protection, storage and retrieval methods and procedure (applicable to organisations not using software)
	• Establish the contingency measures to cope with situations such as loss of information or malfunction, etc. due to computer or software failure.
	• Review the effectiveness of the inventorial document system and the feedback from front-line colleagues, revise respective procedures to optimise operation efficiency.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of effectively managing the inventorial documents and software (including backup) for parts and accessories according to the documentary system designated by the organisation, so as to ensure smooth operation; • Capable of establishing contingency measures to cope with special incidents, such as computer failure or loss of information, to ensure effective inventory management; and • Capable of reviewing the effectiveness of the inventorial document system for parts and accessories and making suggestions for improvement; reviewing feedback from front-line colleagues to revise respective procedures to optimise operation efficiency.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed general knowledge of auto parts and accessories as well as the knowledge of inventory management.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Select suppliers of parts and accessories
Code	108622L4
Range	This unit of competency is applicable to the practitioners of the parts and accessories purchasing department of non-designated motor agents for the effective ascertainment of the grading and the supplying ability of various suppliers.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Regulations related to auto parts and accessories, and the actual situation of market supply) • Good understanding of the functions and characteristics of auto parts and accessories. • Master information of different suppliers of non-OEM parts and accessories. (including original and non-original) • Good understanding of market feedbacks on parts and accessories. • Good understanding of the suggestions and restrictions established by auto manufacturers on the specifications and restrictions of different parts and accessories. • Good understanding of the vehicle related laws and regulations, such as traffic, environmental protection and road safety. 2. Performance (Select suppliers of parts and accessories) • Evaluate the grading of the auto parts and accessories suppliers (including original and non-original) according to the following factors: ◦ The track records of suppliers ◦ The quality, specification or standard of goods. ◦ The stability of the quality and quantity of goods ◦ The minimum order and flexibility of goods supplied ◦ Price of goods, methods of return of purchase and payment ◦ Suggestions and restrictions established by the manufacturer ◦ Recognition by insurer • Identify the grading of various suppliers and their possessive supply ratio according to assessment results. • Keep sourcing for new suppliers in the market that are suitable for the organisation. • Monitor the performance of suppliers and update the list and the grading of suppliers regularly. • Review the selection criteria for auto parts and accessories suppliers and make suggestions for improvement to ensure the quality of parts and accessories.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of identifying the grading of suppliers and their goods supply ratio according to the quality, price, supplying ability and conditions offered by different suppliers of auto parts and accessories, and

	• Capable of adjusting the grading of suppliers and updating the list according to their performance.
Remark	The credits value of this unit of competency assumes that the practitioner concerned has already possessed knowledge on auto parts and accessories as well as general commercial knowledge.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Purchase renovated parts and accessories
Code	108623L4
Range	This unit of competency is applicable to the practitioners of auto parts and accessories purchase department for the quality and high commercial-value renovated parts and accessories purchasing in accordance with the market demand to match the operation strategy of organisation.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics, specifications and market situation of auto parts and accessories) • Master information on market price and demand of different auto parts and accessories (including new and renovated parts and accessories). • Good understanding of the specifications, standard and relevant regulations on parts and accessories. • Master the required inventory level of different reconditioned parts and accessories. • Good understanding of the procedure for selecting suppliers. • Master the quality of goods, supplying ability, preferential terms and conditions offered by different suppliers of renovated parts and accessories. • Good understanding of the methods to assess the performance of renovated parts and accessories. • Master the handling of purchasing documents of the organisation. • Good understanding of the resources available and risks affordable of the organisation.

	2. Performance (Purchase reconditioned parts and accessories)
	• Determine the types and quantity of renovated parts and accessories to be purchased according to market demand and matching with the required inventory level and resources of the organisation.
	• Discharge purchasing duty according to the determinants for purchasing suitable renovated parts and accessories, such as:
	  ◦ Discounts and allowances
	  ◦ Quality and performance of goods as well as the warranty period
	  ◦ Specification and standard (not supplied by local market)
	  ◦ Recognition by insurers
	  ◦ Regulations related to vehicles
	• Confirm the suppliers according to the formulated selection instructions of the organisation, such as:
	  ◦ The quality, specification or standard
	  ◦ The stability of the quality and quantity
	  ◦ Price, methods of return of purchase and payment
	• Ensure that the marginal profits of transactions can meet organisational operation requirements.
	• Ensure the renovated parts and accessories to be purchased are of good quality by visual inspection or simple functional tests.
	• Verify the documents relating to the goods to be purchased to ensure the authenticity of the information provided, such as the engine number.
	• Complete transaction documents and internal records and documents according to related regulations governing the sale of goods.
	• Carry out contingency measures for special incidents (e.g. discrepancy in quality and quantity).
	• Review the effectiveness of the purchasing strategy, and capable of making suggestions for adjustment or improvement.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of purchasing renovated parts and accessories of suitable types, quantity, quality with commercial value according to the needs of the market and the organisation to match the operation strategy of organisation; • Capable of completing relevant records and transaction documents according to the established requirements of the organisation; and • Capable of making suggestions to optimise the procedure of renovated parts and accessories procurement according to its effectiveness.
Remark	The credits value of this unit of competency assumes that the practitioner concerned has already possessed knowledge on purchasing, auto parts and accessories as well as relevant regulations.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Establish methods to assess the applicability of non-OEM parts and accessories
Code	108624L4
Range	This unit of competency is applicable to the practitioners of the parts and accessories purchasing department of non-designated vehicle agents for accurate ascertainment of the applicability of non-OEM parts and accessories accurately to enhance the flexibility of sales and purchasing operations.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (OEM and non-OEM parts and accessories, relevant regulations and the market situation) • Good understanding of the functions, locations and characteristics of auto parts and accessories. • Master information on the specification (e.g. international standard), price and market demand of different OEM and non-OEM parts and accessories. • Good understanding of the suggestions and restrictions established by the auto manufacturers on the specifications of different parts and accessories. • Good understanding of the recognition of different non-OEM parts and accessories by auto insurers. • Know the vehicle related ordinances and regulations (e.g. traffic, environmental protection and road safety). • Know the trend of environmental-friendly products. 2. Performance (Assess the applicability of non-OEM parts and accessories) • Assess the feasibility of replacing OEM parts and accessories by non-OEM parts and accessories according to their characteristics: ◦ Specifications and application characteristics ◦ Price and market demand ◦ Suggestions and restrictions established by the manufacturer ◦ Recognition by insurers ◦ Relevant regulations of vehicles • Formulate sustainable measures to monitor the quality of non-OEM parts and accessories. • Formulate internal instructions on the applicability of non-OEM parts and accessories facilitating the sales department for provision of professional advice to customers. • Review the assessment criteria of non-OEM parts and accessories, and make suggestions to cope with changes in the specifications of goods and relevant regulations.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating instructions on the assessment of applicability of non-OEM parts and accessories in accordance with the characteristics and specifications of OEM parts and accessories as well as relevant regulations, and

	• Capable of revising the standard for assessing non-OEM parts and accessories in accordance with changes in the quality of goods and relevant regulations.
Remark	The credits value of this unit of competency assumes that the practitioner concerned has already possessed knowledge of auto parts and accessories as well as relevant regulations on vehicles.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Conduct green procurement
Code	108625L4
Range	This unit of competency is applicable to the merchandisers in various workplaces of the automotive industry. Practitioners should be able to take full consideration of environmental-friendly elements when discharging purchasing duty (including commodities and services) in familiar workplaces to meet the comprehensive environmental protection policy of the organisation and the needs of the market.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (About green materials) • Good understanding of the characteristics, labelling system and classification of reusable materials, such as paper products, plastic products, organic chemicals. • Understand the contamination of typical chemicals in automotive industries, such as toxicity, carcinogenicity, volatility, ozone layer depletion. • Good understanding of environmental management standard such as International Standard Organisation (ISO • Good understanding of the trend of the market supply of relevant green material 2. Performance (Select green materials and suppliers) • Purchase goods: Capable of taking full consideration of the green characteristics of products when purchasing consumables to be used by the servicing workplaces under the organisation or the commodities sold at retail shops such as paints, organic solvent, cleansers, hydraulic oil, lubricants, engine oil, consumable parts, batteries, tyres, brake linings, filters. • Select suppliers/contractors: capable of taking full consideration of the environmental protection management standard of suppliers to see if they can meet the environmental protection policy of the organisation when selecting products or service suppliers, including suppliers of consumables, commodities, waste chemicals recycling contractors, waste treatment contractors. • Differentiate service contractors with recognised qualifications such as waste chemicals recycling companies.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of taking into full consideration of the environmental protection elements in the products, including the intrinsic environmental-friendly characteristics of the products and the environmental protection management standard of the suppliers when discharging environmental-friendly purchase in familiar workplaces; • Capable of selecting suppliers or contractors that can meet the environmental protection management standard of the comprehensive environmental protection policy adopted by the organization; and • Capable of selecting specific service contractors with recognised qualifications.

Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Establish the procedure for the storage and retrieval of parts and accessories
Code	108630L4
Range	This unit of competency is applicable to the practitioners of the departments for auto parts and accessories sale, inventory control and management, and warehouse management for establishment of effective procedures in the storage and retrieval of auto parts and accessories, and effectiveness review to facilitate accurate, safe and speedy storage and retrieval of auto parts and accessories.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories as well as the related hauling devices) • Good understanding of the characteristics of auto parts and accessories as well as storage, haulage and protection requirements. • Identify the applicability of different hauling devices. • Good understanding of the storage and retrieval methods for different kinds of goods and the related monitoring documents. • Good understanding of the labelling system of organisation for auto parts and accessories, and its characteristics. 2. Performance (Procedure for the storage and retrieval of auto parts and accessories) • Establish the documentary system for the storage and retrieval of auto parts and accessories. • Formulate the protection and packaging specifications for different goods according to the characteristics of various kinds of auto parts and accessories. • Determine disposal methods according to the characteristics of different protection and packaging materials. • Establish the procedure for the storage, retrieval and verification of different goods, including at different places, such as: ◦ warehouses ◦ servicing workshops ◦ retailing points • Establish contingency measures for cases such as wrong retrieval or verification of goods. • Establish the performance indicator for the storage and retrieval of goods. • Review the effectiveness of the storage and retrieval of goods and the feedback from front-line staff for respective procedure revision to optimise the efficiency of the storage and retrieval process.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is: • Capable of establishing effective procedure for the storage and retrieval of goods including protection of goods and related documents according to the characteristics of auto parts and accessories as well as haulage and protection requirements; and

	• Capable of improving the storage and retrieval methods according to the performance indicator for the storage and retrieval of auto parts and accessories as well as the feedback from front-line staff.
Remark	The credits value of this unit of competency assumes that the assessee concerned has already possessed basic knowledge on auto parts and accessories as well as logistics.

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Functional Area - Vehicle Servicing

Title	Formulate rules of safety operation for vehicle servicing work
Code	108730L4
Range	This unit of competency is applicable in vehicle servicing workplaces. Practitioners should be able to formulate rules of safety operation for vehicle servicing work according to relevant regulations on occupational safety and health, instructions of respective organisational policies as well as risk assessment reports and suggestions on control measures. They should also be able to establish related filing system.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Rules of safety operation for vehicle servicing work) • Good understanding of relevant regulations on occupational safety and health. • Master organisational policy on occupational safety and health. • Master the procedure for vehicle servicing and related work. • Good understanding of risk assessment and control measures. • Good understanding of formulation of rules of safety operation and monitor its implementation. 2. Performance (Formulate rules of safety operation for vehicle servicing work) • Formulate rules of safety operation for vehicle servicing work according to the instructions of relevant regulations on occupational safety and health, organisational operation policies as well as risk assessment reports and suggestions on control measures, such as: ◦ Formulate rules of safety operation in collaboration with relevant persons ◦ Rehearse, examine and revise the rules of safety operation for vehicle servicing work ◦ Establish and maintain related filing system in collaboration with relevant persons ◦ Formulate monitoring system to monitor the implementation of the rules of safety operation in collaboration with the management staff at the workplaces ◦ Review the rules of safety operation periodically in collaboration with relevant persons ◦ Analyse, revise or delete relevant items and content of the rules of safety operation in collaboration with relevant people according to the investigation report on hazardous incidents and updated risk assessment documents • Determine the rules of safety operation for vehicle servicing works can comply with related regulations on occupational safety and health.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating effective rules of safety operation for vehicle servicing work and assisting the monitoring of implementation according to the instructions of relevant regulations on occupational safety and health as well as organisational operation policies; • Capable of establishing and maintaining related filing system, analyzing and reviewing the effectiveness of the rules of safety operation periodically; and

	• Capable of determining correctly that the rules of safety operation for vehicle servicing works shall comply with related regulations on occupational safety and health.
Remark	The credits value of this unit of competency assumes that the practitioner concerned has already possessed extensive knowledge on vehicle servicing. The major legislations/rules involved in this unit of competency are as follows: • Factories and Industrial Undertakings Ordinance • Occupational Safety and Health Ordinance

Specification of Competency Standards
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Functional Area - Vehicle Servicing

Title	Monitor, arrange and coordinate the progress and workflow of the operation in the workshop
Code	108732L4
Range	This unit of competency is applicable in vehicle servicing workplaces. Practitioners should be able to monitor, arrange and coordinate the progress and workflow of the daily operation of workshops according to organisational operation strategy.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operation management of vehicle servicing workshops) • Master organisational operation strategy. • Good understanding of respective operational regulations. • Good understanding of the concept of customer services. • Good understanding of the concept of human resources management. • Master workshop management. • Good understanding of crisis management.

	2. Performance (Monitor, arrange and coordinate the progress and workflow of the operation of the workshops)
	• Capable of monitor, arrange and coordinate the workflow of vehicle servicing according to organisational operation strategy and instructions of respective operational regulations such as labour, employment, factory undertakings, occupational safety and health as well as environmental protection:
	  ◦ Collect information on human resources, assess production capability as well as to set up and review production indicators
	  ◦ Establish, revise and implement daily operation workflow systems such as:
	  ▪ production workflow
	  ▪ quality control
	  ▪ customer services
	  ▪ interdepartmental communication mechanisms
	  ▪ staff appointment
	  ▪ occupational safety and health as well as environmental protection management
	  ▪ replenish spare parts
	  ▪ purchase equipment, goods and materials
	  ▪ maintenance of workshop equipment
	  ▪ waste disposal
	  ▪ other related issues
	  ◦ Establish, revise and implement crisis management mechanism such as in the event of fire and typhoon.
	  ◦ Establish, revise and implement customer services complaint
	  ◦ Coordinate and settle interdepartmental disputes.
	  ◦ Monitor daily operation systems
	  ◦ Monitor daily production progress
	• Ascertain that the operation management of the workshop can meet relevant the requirements of the regulations of employment, occupational safety and health as well as environmental protection.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of effectively monitoring, analysing, arranging and coordinating the workflow of vehicle servicing according to organisational operation strategy to achieve target performance indicators; and • Capable of ascertaining that the operation management of the workshop shall meet the requirements of relevant regulations of labour, employment, occupational safety and health as well as environmental protection.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed extensive knowledge on vehicle servicing and understand respective working procedure.

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Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of steering systems
Code	108736L4
Range	This unit of competency is applicable to technicians working at vehicle servicing and inspection departments. Practitioners should be able to master the effects of steering system, suspension system and wheel alignment on the performance of steering stability, to enhance the efficiency and accuracy of inspection and complicated fault diagnosis.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Relevant steering systems) • Master the importance of Ackermann Principle of steering. • Master the structure, functions, operating principles and specification of various types of power-assisted steering systems (including related components). • Understand the structure, functions and operating principles of the steering systems for dual-front axle vehicles, such as the relation between the steered angle of wheels and steering linkages. • Good understanding of the structure, functions and meanings of markings of different types of tyres and rims. • Good understanding of the importance of wheel balance, and the method to balance wheels. • Master the function, importance, special characteristic and application of tread patterns. • Good understanding of the important and related factors affecting the steering stability of vehicle, including the steered angles of wheels. • Master the definition, functions, related factors, operating principle and specification of wheel off-sets. • Good understanding of the apply forces exerted on steered wheels and the impact on steering stability, including neutral steer, oversteer, understeer and side slide of vehicle. • Good understanding of the impacts of suspension systems on steering stability. • Good understanding of the relation between the steered angle of wheels and side slide. 2. Performance (Inspection, fault diagnosis and analysis on steering system and driving control) • Conduct inspection, fault diagnosis and analysis procedures according to the fault symptoms (including recurrent or intermittent defects) of steering systems and related components. • Conduct inspection, fault diagnosis and analysis procedures according to the respective fault symptoms of wheel alignment. • Conduct inspection or fault diagnosis procedures according to symptoms of instability (including recurrent or intermittent phenomena) when high speed cornering. • Review the causes of defects and diagnostic methods; submit report to seniors covering preventive measures, instructions on inspection and maintenance as well as suggestions for improvement. • Ascertain the applicability of tread pattern and depth according to respective legislative requirements.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, functions and operating principles of various types of steering systems (including related components) to enhance the efficiency and accuracy of inspection and complicated fault diagnosis; • Capable of mastering the principle of vehicle steering as well as the impact of suspension systems, tyres and wheel alignment on steering stability to solve the complicated technical problems of abnormal wear of tread pattern and vehicle side slide, etc., effectively and accurately; and • Capable of compiling reports covering preventive measures, instructions on inspection and maintenance as well as providing suggestions for improvement, etc. according to the defects relating to steering stability.
Remark	The credit for this competency unit assumes that the practitioner already has possessed extensive knowledge of automotive, vehicle repair and testing procedures.

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Functional Area - Vehicle Servicing

Title	Master the complicated techniques of vehicle body and frame
Code	108739L4
Range	This unit of competency is applicable to technicians working at vehicle servicing and inspection departments. Practitioners should be able to master the effect of vehicle body and frame affecting driving stability, noise, seepage and compartment appearance to enhance the efficiency and accuracy of complicated defects inspection.
Level	4
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Relevant vehicle body and frame)
	• Materials for vehicle body and frame
	  ◦ Good understanding of the characteristics and adaptive ranges of different metals, non-metals and plastics
	  ◦ Master the joining methods of different materials, their strength and application limits
	  ◦ Master the methods of damage testing of different materials (e.g. fractures and ageing)
	  ◦ Rectification of vehicle body and frame
	  ◦ Good understanding of the principles of rectification and repair, such as ductility and heating, etc., for deformed or damaged materials; as well as the impact on strength of the material due to the incident and repair process
	  ◦ Master the standard specifications of reference points locations for vehicle frame or structural panels
	  ◦ Good understanding of the relationship between wheel alignment and the orientation of vehicle frame or structural panels, as well as its impact on driving stability
	• Sealing of compartment
	  ◦ Understand the causes and sources of abnormal noises when vehicle running, such as clashing, vibrating and loosening of related devices inside or outside the cabin, and air current
	  ◦ Understand the conditions for aligning vehicle doors and windows, as well as the functions of plastic pads and rails
	• Painting and protection of vehicle body and frame
	  ◦ Master the protective paints applied on various kinds of materials for vehicle body or frame, their characteristics and spraying methods
	  ◦ Good understanding of the characteristics, application and handling methods of various kinds of vehicle paints
	  ◦ Master the colour tuning of paints, colour matching and treatment of glossy surface
	  ◦ Good understanding of the characteristics and application of different fillers
	• Master the relevant laws and regulations governing the dimensions of various types of vehicle bodies.

	2. Performance (Inspection and defect analysis of vehicle body and frame)
	• Conduct inspection and defect analysis on respective vehicle body and frame according to abnormal symptoms of driving instability, such as yawing.
	• Conduct inspection and defect analysis on respective vehicle body and frame according to abnormal symptoms of noise or seepage when vehicle running caused by unsatisfactory compartment sealing.
	• Conduct inspection and defect analysis according to symptoms of abnormal compartment appearance, such as:
	  ◦ Uneven discolouration of coating and colour fading
	  ◦ Abnormal rustiness
	• Review the causes of defects and diagnostic methods; submit report to seniors covering preventive measures, instructions on inspection and maintenance as well as suggestions for improvement.
	• Provide appropriate repairing guidelines according to the extent of rustiness or damages of vehicle frame or structural panels, such as specification of materials, welding methods and joining standards, to guarantee that the structural strength (including the dimension of vehicle body) can be recovered to the original standard of manufacturer and met with respective legislative requirements.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure and functions of vehicle body and frame (including compartment trim, etc.) to enhance the efficiency and accuracy of complicated defects inspection, such as driving stability, noise, seepage and compartment appearance; • Capable of mastering the characteristics and application limits of different materials of vehicle body and frame as well as the impact of joining methods on the structure and cabin appearance, etc., to solve the complicated technical problems, such as yawing and colour fading, etc., effectively and accurately; • Capable of mastering the strength of vehicle frame or structural panels required by the vehicle manufacturer and respective regulations; compiling appropriate repairing guidelines; and • Capable of compiling reports covering preventive measures and providing suggestions for improvement, etc. according to the specific defects found in respective vehicle body and frame (including the compartment trim).
Remark	The credit for this competency unit assumes that the practitioner already has possessed extensive knowledge of automotive body construction and knowledge of vehicle body repair (body correction, welding and painting).

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct quality check on vehicle examination
Code	108740L4
Range	This unit of competency is applicable in vehicle examination workplaces. Practitioners should be able to conduct quality check on vehicle examination according to instructions of respective regulations on vehicle examination.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle examination and quality verification) • Be familiar with respective regulations on vehicle examination. • Good understanding of quality monitoring to facilitate the quality verification in vehicle examination. • Good understanding of the concept of customer services. 2. Performance (Conduct quality verification on vehicle examination) • Conduct quality verification on vehicle examination in accordance with instructions of respective regulations such as: ◦ Monitor the operation of vehicle examination ◦ Approve and record daily documents relating to vehicle examination ◦ Conduct random check on vehicles • Handle complaint cases such as conduct vehicle re-examination. • Review the quality of vehicle examination as to minimise differences between testers in compliance with respective regulations. • Execute and release updated instructions. • Monitor and maintain testing instruments and equipment and confirm that they are appropriate for the use in vehicle examination. • Other operations related to the quality verifying of vehicle examination. • Determine if the quality of vehicle examination can meet the statutory requirements.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting quality verification on vehicle examination according to instructions of respective regulations; and • Capable of approving and releasing documents relating to vehicle examination according to respective regulations.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed knowledge on vehicle servicing and the capability of vehicle examination. The major legislations/rules involved in this unit of competency are as follows: • Road Traffic Ordinance

	• Road Traffic (Construction and Maintenance of Vehicles) Regulations

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Handle complicated technical servicing problems
Code	108751L4
Range	This unit of competency is applicable in vehicle servicing workplaces. Practitioners should be able to conduct comprehensive investigation into technical servicing problems that cannot be solved by general servicing staff. They may be required to coordinate other staff from vehicle manufacturer or technicians within the organisation to handle technical servicing problems.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operating principles of various vehicle systems) • Master the operating principles of various vehicle systems. • Master the interaction among various vehicle systems and their relationship. • Be familiar with the vehicle manufacturer's manual and updated information. • Master the communication pattern with respective technical support departments of the vehicle manufacturer. 2. Performance (Handle complicated technical servicing problems) • Collect information and data on the faults. • Analyse the causes for faults with reference to the manufacturer's manual and updated information with knowledge of various vehicle systems. • Conduct in-depth investigation with the technicians to analyse the causes of faults found. • Communicate with the technical support department of the vehicle manufacturer on unsettled complicated technical servicing problems under inherent servicing information condition and provide the information and data of faults found. • Implement related suggestions on servicing, conduct test and review effectiveness upon completion of work. • Compile a full servicing report after completion of the problem.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of handling complicated servicing problems of various vehicle systems and components; and • Capable of compiling a full servicing report.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed the capability to conduct fault diagnosis on various vehicle systems.

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Functional Area - Vehicle Servicing

Title	Provide quotation for vehicle body building work
Code	108766L4
Range	In the body building workshop, practitioners should be able to receive customers according to the established procedures of the organization, providing body assembly quotes, making appropriate recommendations to assist customers, providing relevant services and preparing quotations.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Providing quotation for vehicle body building work) • Good understanding of the requirements of respective local legislative provisions on the dimension of vehicle body and the use of roads. • Good understanding of the distribution and scope of work of various vehicle body building departments. • Master the specification and cost of body building parts. 2. Performance (Provide quotation service to customers) • Receive customers according to organisational procedure; understand customer needs and give suggestions on vehicle body building. • Master the distribution of work and the workflow of each department; calculate the costs, profits and charges of vehicle body building work. • Complete quotation form.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of receiving customers according to organisational procedure, providing quotation for vehicle body building work and giving appropriate suggestions; and • Capable of understanding the distribution of work and the workflow among the departments as well as calculating the costs, profits and charges.
Remark	The credit value of this competency unit assumes that the practitioner has possessed knowledge of the car body structure.

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Functional Area - Common Competency

Title	Promote the culture of quality management in elementary level staffs
Code	108770L4
Range	This unit of competency is applicable to managerial staff in workplaces of the automotive industry. Practitioners should be able to promote and fostering the culture of quality management in elementary level staffs and capable of handling various suggestions on quality improvement when discharging their duties of quality management.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Concept of quality management) • Good understanding of the detailed procedure for implementing organisational quality management system in one's department. • Fully master thoroughly the daily operation of the department under one's supervision. • Good understanding of the quality of sales and after-sales services and its unique and close relationship in duties of elementary level staffs. 2. Performance (Promote and foster the culture of quality management in elementary level) • Promote the culture and the importance of quality management to elementary level staffs, such as: ◦ Provide on-job training to elementary level staffs on the cognition of quality ◦ Set up quality monitoring group among elementary level staffs to facilitate the culture of quality management ◦ Organise activities related to quality management for elementary level staffs, such as quiz, quality circle, visits, seminars. • Conduct departmental discussion meetings for the quality monitoring group at appropriate times according to the workflow of sales and after-sales; and collect, analyse and screen suggestions from elementary level staffs on the improvement of sales and after-sales services; and report to the management level if the proposals are practicable and can tie in with organisational culture and policy.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of instilling quality management culture to the minds of elementary level staffs so that they can understand the close relationship between elementary level duties and the quality of sales and services; • Capable of organising activities related to quality management so as to foster elementary level quality management culture; and • Capable of collecting, analyzing suggestions from elementary level staffs on the improvement of quality management and reporting to management level according to organisational mechanism.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Coordinate and implement quality management systems
Code	108771L4
Range	This unit of competency is applicable to the staff promoting quality management in the automotive industry. Practitioners should be able to explain to the heads of sales and after-sales departments as well as staffs at all levels the method of implementation of quality management systems in daily operation according to their in-depth knowledge on quality management systems.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Quality management and organisational operation) • Master the organisational quality management system, including the structure of quality management, document and filing system, management policy, effectiveness measurement, management objectives, evaluation, auditing, improvement measures, training, communication mechanisms. • Good understanding of the entire operation of sales and after-sales departments and their flow of coordination. • Good understanding of the operation of the information management system in the organisation. 2. Performance (Coordinate quality management systems) • Capable of communicating with the heads of sales and after-sales departments as well as staffs at all levels; understand their daily operation and explain to them the quality management systems; coordinate and establish working instructions and working procedure practicable in their daily operation and can tie in with quality management systems. • Explain to staffs at all levels the document management system and effectiveness measurement mechanism. • Communicate with the information management system department to facilitate the integration of quality management systems. • Collect or coordinate information so as to implement the effectiveness measurement mechanism. • Report to the management level on the progress of the implementation of quality management.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of communicating with a broad range of staff according to one's in-depth knowledge on quality management systems and the operation of different departments so as to coordinate and establish working instructions or working procedure that are practicable which can be tied in with quality management systems; • Capable of explaining to staff at all levels the implementation of quality management systems; and • Capable of collecting and compiling information so as to implement effectiveness measurement mechanism and report to the management level.

Remark	

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Functional Area - Common Competency

Title	Monitor the quality of servicing work
Code	108772L4
Range	This unit of competency is applicable to the managerial staff in vehicle servicing workshops. Practitioners should be able to understand the daily operating procedure of familiar workplaces and implementing quality control and quality assurance systems so as to ensure high quality services.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Respective working procedure and the key points of quality monitoring) • Good understanding of the entire structure of vehicles and the functioning of the systems to an extent that can understand the impact of departmental procedure on the safety and performance of vehicles. • Master the details of the operating procedure in the department to which one belongs to. • Good understanding of the key points of quality monitoring and the requirements of each working procedure, including inspection procedure, servicing procedure and reviewing procedure. 2. Performance (Implement quality control and quality assurance system) • Compare the quality of work delivered by subordinate staff and the standard required by the quality management system on the quality monitoring points so as to judge if the prescribed requirements have been met. • Provide supervision for rectification when confirming “non-compliance” cases so as to avoid repetition of work and waste of resources. • Employ one’s experience to judge the standard of work delivered by subordinate staffs for working procedures without clearly stipulated monitoring standard such as the accuracy of inspection result, the working hours required for non-standard servicing work, the performance of used cars; and offer assistance whenever necessary including provision of training.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the structure and functions of vehicles, the details of the working procedure of the department to which one belongs to, the key points to note for monitoring and the requirements of quality management systems; • Capable of comparing the quality of work of subordinate staffs with that of the standard to determine if the servicing work can meet the requirements; • Capable of employing his experience to make judgment for working procedure without clearly stated standard; and • Capable of providing supervision or assistance when non-compliance cases arise.
Remark	

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Functional Area - Common Competency

Title	Conduct preliminary analysis on procedural deficiencies
Code	108773L4
Range	This unit of competency is applicable to the middle managerial staff in vehicle servicing workshops of the automotive industry. Practitioners should be able to record procedural deficiencies, making preliminary analysis and recording data according to the key points of quality monitoring when discharging their duties of quality management.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Quality assurance and the respective procedure) • Good understanding of quality assurance procedure and the details of specification of the quality management system. • Good understanding of the daily operation of the department to which one belongs to and the established quality requirements of each procedure. 2. Performance (Record the quality of various working procedures and the problems detected) • Implement quality assurance system according to quality management plan and get a thorough understanding of the specification for quality check so as to conduct strict quality check with respect to the key points of quality monitoring; compare the results with the required standard and record various procedural deficiencies and problems detected for preliminary analysis to be made, such as: ◦ Faulty inspection and judgement ◦ Wrong maintenance procedure ◦ Poor standard of work ◦ Insufficient provision of spare parts ◦ Insufficient equipment ◦ Lack of coordination and communication ◦ Instrumental deviation ◦ Ineffective monitoring ◦ Lack of technical support, etc. • Quantify and sort out the situation of quality management and the problems detected to provide clear data or information to the management level for compiling relevant report.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of inspecting various working procedures according to established quality assurance procedure; comparing the results with the required standard and recording the problems with quality of work to make preliminary analysis; quantify and sort out the data and information; and • Capable of providing clear data to the management so as to objectively reflect the problems with the quality of work.

Remark	

Specification of Competency Standards
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Functional Area - Common Competency

Title	Establish procedures for parking, flow control and security of vehicles
Code	108789L4
Range	This unit of competency is applicable to various kinds of vehicle servicing workshops and car parks in the automotive industry. Practitioners should be able to understand the characteristics of different types of vehicles and the environmental requirements of car parks. They should also be capable of establishing the procedures for parking, flow control, security, contingency measures, monitoring of vehicles.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of different types of vehicles and the environmental requirements of car parks) • Good understanding of the environmental requirements for parking different vehicle types or for servicing work, such as outdoor or indoor parking, ventilation, lighting requirements and floor height clearance. • Master about the security/anti-theft facilities in car parks. 2. Performance (Establish the procedures for parking, flow control and security of vehicles) • Assess the storage capacity with respect to its vehicle types in car parks or operating places. • Assess the characteristics of different zones in the operating places, such as the potential risks concerning the entrance and exit of vehicles and the flexibility of parking different vehicle types. • Understand the preparatory measures required for transportation of vehicles on trucks, prolonged parking outdoor or indoor and establish implementation guidelines. • Compile record on the entrance/exit and custody of vehicles; draw up vehicle security measures; and establish custody system of car keys so as to tie in with the custody of vehicles. • Draw up instructions and authorise respective staff to perform the duties of daily vehicle flow control, transportation of vehicles, custody of car keys and car park security. • Establish monitoring procedure to get hold of the vehicle storage in the parking and the workflow; and formulate contingency measures. • Establish procedure to ensure that the specification of the operating places and the use of land can meet relevant statutory requirements.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is : • Capable of understanding the characteristics of different types of vehicles and the environmental requirements of parking and in the course of work; • Capable of assessing the parking capacity and functions of the operating places so as to establish the procedures for parking, flow control, security and contingency measures; • Capable of establishing monitoring procedure to get hold of the daily operation of the operating places; and

	• Capable of formulating procedure to ensure that the specification of the operating places can meet statutory requirements.
Remark	

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Unit of Competency

Functional Area - Common Competency

Title	Investigate typical accidents at work
Code	108790L4
Range	This unit of competency is applicable to various kinds of workplaces in the automotive industry (e.g. vehicle servicing workshops, car parks). Practitioners should be able to investigate typical accidents at work and writing relevant reports.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The causes of accidents) • Master about the operation of related workplaces. • Know about the definition of accident and the cause theories, such as the theory of domino effect. • Good understanding of the typical categories of accidents and their causes, such as crush injury, wounded, incised wound, sprained, burnt, fire, contact of chemicals with skin or eyes, electric shock, explosion, gas leakage and fall from height. • Good understanding of the investigation procedure for accidents: classification of accidents, collection of information, reporting to related departments and compilation reports. 2. Performance (Investigate the accidents) • Implement the investigation procedure for accidents according to organisational instructions, such as: ◦ Classification of accidents ◦ Objectively trace the persons, machineries and objects involved in the accident as well as the environment, time, location and process of the accident, etc.; and conduct interviews, take photographs, set questionnaires, etc. whenever necessary • Analyse the causes for accidents with reference to past records and make suggestions for improvement whenever necessary so as to reduce the chance of reoccurrence. • Implement related administrative procedure such as writing investigation report on the accident.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding thoroughly the operation of related workplaces, the categories and causes of typical accidents; • Capable of classifying accidents, collecting information, and analysing the causes of typical accidents in general industry-related workplaces according to organisational guidelines and implementing relevant administrative procedure such as writing investigation report on the accident; and • Capable of making analysis with reference to past accident records and making suggestions for improvement when necessary.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Manage customer services
Code	108795L4
Range	This unit of competency is applicable in workplaces providing vehicle sales and after-sales services. Practitioners should be able to employ customer services management techniques to facilitate staff to serve customers according to the customer services plan of the organisation to enhance business.
Level	4
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Customer services management)
	• Master the customer services management theory, such as:
	  ○ Customers' expectation
	  ○ Value-added services for customers
	  ○ The culture of customer services
	  ○ The degree of customer satisfaction
	  ○ The directional guides on customer services provided by the manufacturing plant of the vehicle brand and the organisation
	• Good understanding of the respective rules that must be observed by customer services staff in the industry, such as:
	  ○ Rules on discipline and services
	  ○ The concept of service ethics
	  ○ Privacy Protection Ordinance
	2. Performance (Manage customer services)
	• Perform the general duty of customer services management according to the disciplinary requirements and rules of services provided by the brand itself and the organisation for customer services staff.
	  ○ Supervise and train staff
	  ○ Establish customer services performance indicators
	  ○ Analyse and handle complaint cases
	  ○ Manage customer services during the pre-sales, sales and after-sales phases
	  ○ Manage service quality records
	  ○ Handle general customer files and message management
	  ○ Handle general electronic customer services management
	  ○ Enforcement and implementation of the Privacy Protection Ordinance
	• Improve customer services regularly according to organisational assessment criteria and feedback mechanism.
	• Arrange reports on a regular basis; report to and communicate with the manufacturing plant of the vehicle brand and relevant departments in the organisation; and demand for enhancement and improvement.

Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of managing customer services according the instructions provided by the vehicle manufacturer and the organisation; providing good customer services for enhancement and improvement to consolidate and foster business.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Handle customers' complaints
Code	108796L4
Range	This unit of competency is applicable to the managerial staff responsible for customer services or sales in various workplaces of the automotive industry. Practitioners should be able to handle and following up customers' complaints on the quality of vehicle products or services independently and appropriately according to the internal guidelines of the organisation. They should also be capable of making evaluation to improve the quality of customer services.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Organisation's procedure in handling customers' complaints) • Master the organisation's established guidelines and regulations in handling customers' complaints on the quality of vehicle products or services, such as: ◦ Understand the nature and causes of complaints ◦ The staff authorised by the organisation to settle customers' complaints and their scope of authority ◦ Understand the organisation's established procedure in referring cases to be settled by appropriate persons ◦ Understand organisational procedure in recording actions taken when settling complaints ◦ Understand communication skills, such as: theory and application of psychoanalysis 2. Performance (Handle customer's complaints on the quality of vehicle products) • Conduct appropriate investigation and analysis into customers' complaints on the quality of vehicle products in accordance with the organisation's internal guidelines, including: ◦ Understand customer complaints in person and be able to calm down customer emotions by effective communication skills ◦ Analyse the cases submitted by subordinates with regard to customers' complaints on the quality of vehicle products or services ◦ Classify the complaints and refer them to relevant departments/staff to follow up as appropriate ◦ Analyse the causes for customers' complaints on quality and settle the problems in collaboration with relevant departments; and update relevant information record ◦ Effectively handle and answer customers' complaints on the quality of vehicle products and services • Review customers' complaints on vehicle products and the quality of services, including: ◦ Analyse satisfaction of customers on customers' complaints via questionnaires ◦ Review the methods and efficiency regarding the handling of complaints • Hold regular meetings to review the customer services to recurrence of the same complaints and to improve the quality of customer services.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of effectively handling and analyzing customers' complaints on the quality of vehicle products and services; and • Capable of drafting a review proposal regarding customers' complaints on product quality to improve the quality of customer services.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Monitor occupational safety and health systems
Code	108806L4
Range	This unit of competency is applicable to middle managerial staffs in various servicing workshops and warehouses in the automotive industry. Practitioners should be able to monitor the daily work and working procedure of the staffs in their departments according to working instructions on occupational safety and health.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Relevant occupational safety and health ordinances as well as organisational instructions) • Good understanding of organisational guidelines on occupational safety and health. • Good understanding of Occupational Safety and Health Ordinance, Factories and Industrial Undertakings Ordinance as well as related labour regulations. • Good understanding of the daily operation and detailed working procedures in one's department. 2. Performance (Monitor the daily work and safety equipment in their departments) • Inspect the daily works and working procedures of the staffs in their department to ensure that organisational guidelines on occupational safety and health have been met, such as the authorities on use of various facilities or equipment and its operating systems, the applications of personal protection equipment, the ventilation within the premises and its potential danger, working underneath the car, working at height, handling of pollutants and dangerous chemicals, waste disposal, the cleanliness of workshops and warehouses, methods of manual lifting, blasting by abrasives or the use of abrasive wheels, painting with flammable liquids, machine operation and protection, the use of lifting appliances and lifting gear as well as gas welding and flame cutting. • Participate in the investigation of accidents/incidents occurred within the area that one monitors and follow up the improvement proposals. • Review the incident reporting mechanism, report to supervisors when appropriate and complete relevant records. • Inspect the emergency exit to make sure the passageway is free from obstacle and firefighting devices are installed. • Inspect the first-aid equipment in one's department. • Review to ensure that incidents are properly reported according to statutory requirements, such as injury at work and serious incidents. • Record cases not complying with respective rules/instructions and notify the people concerned; formulate improvement mechanism and compile comprehensive report regularly.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of understanding Occupational Safety and Health Ordinance, Factories and Industrial Undertakings Ordinance, labour legislations, detailed working procedures in one's department and organisational instructions on occupational safety and health; • Capable of monitoring various working procedures in one's department to see if they can meet organisational instructions on occupational safety and health, so as to safeguard the well-being and safety of staff to avoid injury at work or occupational diseases; and • Capable of formulating improvement mechanisms and compiling comprehensive report on non-compliance cases.
Remark	

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Functional Area - Common Competency

Title	Monitor and manage environmental protection operations
Code	108807L4
Range	This unit of competency is applicable to middle managerial staff in various servicing workshops and warehouses in the automotive industry. Practitioners should be able to understand relevant environmental protection regulations and organisational requirements in familiar workplaces so as to monitor the working procedure in the departments/workshops under their supervision to ensure that requirements of relevant environmental protection regulations and management systems have been met.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Relevant environmental protection regulations and organisational requirements) • Good understanding of organisational requirements on environmental protection. • Good understanding of the environmental protection regulations involved in the work of one's department. • Good understanding of the daily operation and various details of working procedures in one's department. 2. Performance (Monitor environmental protection management systems) • Inspect the daily working procedures of subordinates for confirmation of meeting the organisational guidelines on environmental protection, such as procedures on handling waste engine oil, lubricants, waste paints, organic dissolvent, wash cloth and abandoned containers, the utilisation and handling of refrigerants, the handling of recyclable parts, waste separation and recycling, wastewater treatment, asbestos waste treatment, vehicle emission, consumption of energy and consumables. • Inspect the mechanism for handling pollutant leakage and review the respective measures taken for confirmation of compliance with the working instructions given. • Inspect relevant environmental protection equipment under one's scope of authority for confirmation of normal functioning, such as refrigerant recovery machine, exhaust extraction system, recycling equipment for various kinds of organic substances or its containers, wastewater treatment systems as well as waste and its sorting systems. • Inspect the work of the subordinates for confirmation of meeting the requirements of environmental protection regulations and improve respective mechanisms. • Record cases not complying with respective rules/instructions and notify the people concerned; formulate improvement mechanism and compile comprehensive report regularly.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner shall prove that he/she is: • Capable of monitoring the working procedures in various departments and ensuring that environmental protection measures are implemented;

	• Capable of monitoring the working procedures in various departments and ensuring that legislative requirements on environmental protection are met; • Capable of monitoring relevant environmental protection devices and ensuring that they are functioning normally; and • Capable of formulating improvement mechanisms for non-compliance cases and compiling comprehensive report.
Remark	

Specification of Competency Standards
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Functional Area - Common Competency

Title	Formulate management procedure for dangerous chemicals, pollutants and waste
Code	108808L4
Range	This unit of competency is applicable to general mechanical workshops, vehicle body and painting workshops, LPG vehicle service workshops, testing sites; car cleaning shops, car parks for new/used cars and new/used parts warehouses in the automotive industry. Practitioners should be able to conduct risks assessments on typical dangerous chemicals, pollutants and waste. They should also be able to formulate management procedure and provide a safe working environment.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Definition, characteristics and related regulations on dangerous chemicals, pollutants and waste) • Master the application, labelling system and characteristics of typical chemicals used in the organisation. • Good understanding of the definitions and categories of dangerous chemicals, pollutants and waste. • Good understanding of statutory requirements on the delivery, transportation, utilisation, recycling and disposal of dangerous chemicals, pollutants and wastes as well as the content in the Safety Data Sheet (SDS). • Good understanding of the potential risks of various kinds of pollutants in the organisation and related regulations. • Good understanding of different waste treatment methods employed by the organisation. • Good understanding of the responsibilities of employers and employees stipulated in the Occupational Safety and Health Ordinance.

	2. Performance (Formulate working instructions and management plans)
	• Formulate storage management system, delivery procedure, application guidelines, monitoring systems, disposal and recycling procedure for related dangerous chemicals, such as:
	  ◦ Conduct assessment on the dangerous chemicals in the organisation, such as paints, fuel, organic solvent, strong acids, engine lubricants, automatic gearboxes lubricants, various types of hydraulic oil, pressurised cylinders, refrigerants, coolants, etc. List out the categories, inventory level, storage methods, storage places, consumption level and application locations for all dangerous chemicals
	  ◦ Verify that the storage of all dangerous chemicals can fulfil the statutory requirements in terms of inventory level and storage specifications of different dangerous chemicals
	  ◦ Collect the Material Safety Data Sheet (MSDS) for each type of dangerous chemical and establish relevant database.
	  ◦ Draw up a simple map that listing out the storage, delivery routes and the locations of those dangerous chemicals in use
	  ◦ Assess the risks involved in various kinds of dangerous chemicals such as the time exposed to dangerous chemicals, the frequency of respective procedure and analyse the consequences of failure in rectifying the danger upon occurrence of incidents
	  ◦ Formulate emergency and contingency plans in accordance with the storage, consumption, delivery, recycling and disposal of dangerous chemicals; and determine the responsibilities by posts, such as implementation of evacuation procedure, contact of emergency service departments and the provision of first-aid services.
	• Formulate handling procedure and monitoring system for typical pollutants, such as vehicle emission, dusts, effluent, polluting waste.
	• Formulate procedure to ensure that recoverable waste such as waste tyres, waste batteries, waste oil, waste paper, refrigerants, plastics, metals and polluting waste, etc. are separated for recycling; and temporary storage of those non-recyclable wastes for collection.
	• Draw up training mechanism to equip staffs with the knowledge of the established management policies on dangerous chemicals, pollutants and wastes.
	• Establish management systems on equipment to ensure that relevant resources are adequate and appropriate, such as personal protection equipment, instruments required for first-aid as well as emergency and contingency measures, equipment required for handling pollutants, facilities for temporary storage, disposal and waste recycle.
	• Ensure that the various procedures and instructions formulated are synchronised with organisational operation and meet vehicle manufacturer's standard as well as the statutory requirements of fire prevention, environmental protection, occupational safety and health and related regulations.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating management systems and working instructions on the delivery, transportation, consumption, recovery and monitoring of dangerous chemicals used in the organisation; drawing up working instructions as well as emergency and contingency plan by various posts; and ensuring that management systems and working instructions can comply with the requirements of Dangerous Goods Ordinance, Factories and Industrial Undertakings (Spraying of Flammable Liquids) Regulations as well as Factories and Industrial Undertakings (Dangerous Substances) Regulations; • Capable of formulating the handling procedure and monitoring system for typical pollutants and waste according to the requirements of environmental protection and waste disposal ordinances; • Capable of establishing management system for related devices to ensure adequate supply of resources; and • Capable of establishing training mechanisms to equip staffs with the knowledge of the operation of dangerous chemicals, pollutants and wastes as well as deriving emergency and contingency plan in their own working unit.

Remark	The relevant legislations involved in this unit of competency are as follows: • Factories and Industrial Undertakings (Dangerous Substances) Regulations • Dangerous Goods Ordinance • Factories and Industrial Undertakings (Asbestos) Special Regulations • Occuaptional Safety and Health Ordinance • Waste Disposal Ordinance • Factories and Industrial Undertakings (Spraying of Flammable Liquids) Regulations

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Functional Area - Vehicle Inspection and Prosecution

Title	Conduct statutory roadworthiness inspections for various types of vehicles and verify the compliance of associated documents
Code	111649L4
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provision. Practitioners should be able to professionally inspect the roadworthiness and mechanical fitness of various types of vehicles according to the relevant regulations and guidelines and verify the compliance of associated documents.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various vehicle types, the standard and documentation for vehicle examination) • Conversant with the structure and operating principles of various vehicle types, including but not limited to different categories, traditional and new energy power systems, advanced driver assistance systems, autonomous drive system and associated safety precautions. • Master the legislative provision under the Road Traffic Ordinance of Hong Kong in relation to vehicle inspection and the guidelines to determine the compliance of vehicle structure and operating systems with statutory requirements, including but not limited to mechanical systems, electrical systems, weight and dimensions. • Good understanding of the documentation system for vehicle examination and type approval of various vehicle types.

	2. Performance (Roadworthiness inspection for vehicles and associated document verification) • According to the relevant regulations and guidelines and with reference to the vehicle manufacturer's manual, safely conduct roadworthiness inspection with the assistance of specific equipment to judge the compliance with statutory requirements in roadworthiness and mechanical fitness of various vehicle types, including but not limited to the vehicles of categories L, M, N and O classified by the EU, traditional and new energy power systems, overall dimensions, weight and overhangs. • According to relevant regulations and with reference to the manufacturer's manual and certificates, professionally identify the defects and non-compliance in various vehicle systems, such as powertrain, under-chassis systems, driving controls, chassis, body structure and fittings, electrical systems, high-voltage electrical system (for electrified vehicles only), fuel cell system (for fuel cell electric vehicles only), pressure vessels and associated components, additional electrical and mechanical fittings on board, etc. • According to the relevant regulations and guidelines and with reference to the approval letters and certificates of the power and energy storage systems, verify the compliance of vehicle specifications, and conduct roadworthiness inspection and type approval for various vehicle types, including but not limited to the new energy vehicles of different categories. • According to the relevant regulations and the recognised supporting documents and certificates, determine the legality of autonomous drive and advanced driver assistance systems on board. • Verify the completeness and accuracy of the documents for vehicle examination.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of explaining the structure and operating principles of the vehicle systems of various vehicle categories, including but not limited to power and energy storage systems, autonomous drive and advanced driver assistance systems, and associated safety precautions; • Capable of inspecting various types and categories of vehicles for roadworthiness and mechanical fitness according to relevant regulations, and professionally identifying their defects and non-compliant items, including but not limited to traditional and new energy power systems, energy storage, body specifications, powertrain, under-chassis systems, chassis and body fittings, high-voltage electrical systems, fuel cell systems, and additional electrical and mechanical fittings; • Capable of verifying the compliance of vehicle specifications and conducting the roadworthiness inspection and type approval for various types and categories of vehicles according to relevant regulations and guidelines and with reference to the approval letters and certificates; • Capable of determining the legality of autonomous drive and advanced driver assistance systems according to the relevant regulations and the recognised supporting documents and certificates; and • Capable of verifying the completeness and accuracy of the documents for vehicle examination.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge of vehicles and a good understanding of legislative provision under the Road Traffic Ordinance.

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Functional Area - Vehicle Inspection and Prosecution

Title	Investigate the causes of the vehicle accident
Code	111650L4
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provision. Practitioners should be able to professionally inspect the accidental vehicle to identify the failure of vehicle system or components leading to an incident.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various vehicle types) • Conversant with the structure and operating principles of various vehicle types and categories. • Master the legislative provision under the Road Traffic Ordinance of Hong Kong in relation to vehicle construction and maintenance to determine the compliance of vehicle structure and operating systems with statutory requirements. • Acquainted with the effects of degraded performance of vehicle systems on roadworthiness and safety of vehicle operation. • Good understanding of the requirements for court document submission. 2. Performance (Inspection of accident vehicles) • According to the relevant regulations and guidelines, professionally conduct roadworthiness inspection of accidental vehicles to identify defects and failures in vehicle systems, such as brakes, steering, suspension, tires, driving controls, etc., that would affect the performance and safety of the vehicle and cause the accident. • Based on expertise and experience, distinguish whether the damaged components identified on the accidental vehicle were incurred from the accident or pre-existing, according to the signs of damage. • Write expert reports on the inspection results of accidental vehicles, illustrating the defects and failures that would affect the performance and safety of the vehicles and cause accidents, to provide professional evidence for the prosecution in court.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of inspecting the roadworthiness and mechanical fitness of various types of accidental vehicles to identify the defects and failures in vehicle systems that lead to the incidents according to relevant regulations and guidelines; • Capable of distinguishing whether the damaged components identified on the accidental vehicle were incurred from the accident or pre-existing, according to the signs of damage; and • Capable of writing an expert report on the inspection result of the accidental vehicle, illustrating the defects and failures that led to the accident, to provide professional evidence for the prosecution in court.

Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge and experience of vehicle engineering and good report-writing skills.

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Functional Area - Vehicle Inspection and Prosecution

Title	Handle vehicle examination-related appeals and complaints
Code	111651L4
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provision. Practitioners should be able to professionally handle the vehicle examination-related appeals and complaints according to internal guidelines of the vehicle examination centre.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Appeal and complaint handling procedures and associated technique) • Conversant with the structure and operating principles of various vehicle types and categories, and highly experienced in vehicle maintenance and repairs and associated safety precautions. • Master the legislative provisions in relation to vehicle construction and maintenance, requirements and workflow on vehicle examination, the established appeal and complaint handling procedure of the vehicle examination centre and the scope of authority. • Good understanding of the basics of psychology and theory of complaint handling skills, such as active listening, empathy, emotional intelligence, effective communication, problem-solving, etc. 2. Performance (Handle appeals and complaints on vehicle examination) • Conduct appropriate analysis of the appeal and complaint cases to identify the root causes of the grievance and the motivation of the complainant. • Apply psychoanalysis and compliant handling skills to calm down the emotion of the complainant. • Explain the statutory requirements and procedures of vehicle examination and update the misunderstanding of change of standards to the appellant. • Revalidate the arguable results and provide professional advice on the maintenance and repairs for non-compliant items according to the relevant regulations and scope of authority. • Review the appeal and complaint cases on the judgements, procedures and efficiency of vehicle examination, and the effectiveness of appeal and complaint handling. • Report to seniors on the recurrence of similar appeals relating to the statutory requirements and procedures for meeting the change of product technology.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of effectively handling and analysing appeals and complaints to the satisfaction of authority, appellant and complainant; • Capable of reviewing the complaint cases for continuing improvement of vehicle examination efficiency; and • Capable of reporting the recurrence of similar appeals relating to technology change to seniors.

Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge and experience of vehicle maintenance and complaint handling skills.

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Functional Area - Vehicle Inspection and Prosecution

Title	Execute the vehicle examination operations and quality management
Code	111652L4
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provision. Practitioners should be able to professionally execute the operations and quality management in the vehicle examination based on established strategy and objectives.
Level	4
Credit	4 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Strategy and objectives in vehicle examination, principles of operations and quality management) • Good understanding of the established objectives in the vehicle examination, such as road safety, environmental protection, regulatory compliance, etc., and the strategy for implementation. • Conversant with the documentation system and daily operation of the vehicle examination centre. • Acquainted with the principles and application of operations and quality management, such as planning, monitoring, enforcement, efficiency, etc. • Master the legislative provisions in relation to the vehicle examination. 2. Performance (Implement the operations and quality management in vehicle examination) • Manage the established capacity, workflow, procedures, staffing, inspection quality and documentation system for vehicle examination with the considerations of safety and environmental protection, such as: ◦ daily throughput capacity of examination for various vehicle types ◦ efficiency of the safety and flow control of vehicle in the examination centre ◦ effectiveness of inspection procedures for various vehicle types ◦ monitoring and reviewing the scale, competency and inspection quality of staff, including outsourced personnel ◦ document validation and certificate issuing for vehicle examination • Monitor the normal operation of special tools and equipment for vehicle inspection and review the effectiveness and efficiency. • Design and implement the vehicle approval procedures. • Formulate training programmes in new entry, refreshment, technology and standard highlights, etc. at appropriate time for vehicle inspection staff, including outsourced personnel.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of effectively executing and implementing the operations and management of the vehicle examination centre, including the design and application of vehicle approval procedures; • Capable of executing the vehicle inspection quality in the vehicle examination centres of government and contractors; and

	• Capable of formulating training programmes for specific purposes to refresh and update the competency needs of inspection staff, including outsourced personnel, at appropriate time.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge and experience of vehicle maintenance and principles of operations and quality management.

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Functional Area - Vehicle Inspection and Prosecution

Title	Judge the legitimacy of vehicle operation under rules and regulations relating to road safety and environmental protection
Code	111653L4
Range	This unit of competency is applicable in designated vehicle examination workplaces under legislative provisions. Practitioners should be able to master the local rules and regulations on environmental protection and road safety for the judgement of the legitimacy of vehicle operation.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Respective rules and regulations in relation to vehicles) • Master the scope of application of local regulations in relation to vehicle operation. • Good understanding of local rules and regulations on the structure of various vehicle types, such as the electrical and mechanical setup, body, road safety, etc. • Good understanding of local requirements and regulations on the noise and exhaust emissions, gas and electrical safety of vehicles. 2. Performance (Judgement of legitimacy of vehicle operation) • Accurately judge the legality and compliance of the operation of various vehicle types according to the respective rules and regulations, and with reference to the manufacturer's manual, including but not limited to: ◦ noise and exhaust emissions ◦ electric power and gas power charging inlets (for new energy vehicles only) ◦ vehicle structure, such as specifications of electrical and mechanical setup, body shape and dimensions, weight, etc. ◦ road safety, such as the maintenance conditions
Assessment Criteria	The integrated outcome requirements of this unit of competence are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the regulatory categories, respective rules and regulations on environmental protection and road safety of the vehicles; and • Capable of judging the legitimacy of vehicle operation under respective rules and regulations on environmental protection and road safety.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses extensive knowledge of vehicles. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Environmental Protection Ordinance • Gas Safety Ordinance

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Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis on the propulsion control systems of electrified vehicles
Code	111744L4
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be masterly able to conduct fault diagnosis on the propulsion systems of electrified vehicles and conduct or arrange rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct system tests and provide written report upon completion of work.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of the propulsion systems on various types of electrified vehicles) • Good understanding of the structure and operating principles of the propulsion control of various types of electrified vehicles, such as the electric motors, fuel cell systems and types of hybrid electric systems. • Good understanding of the hazards and safety rules of the electric drive system of electrified vehicles. • Master the operation of various types of diagnostic and testing instruments and equipment, such as on-board diagnostic systems. • Master the fault diagnosis procedure for the abnormal performance of propulsion control and power modulation on electrified vehicles, including fuel cell electric, battery electric and hybrid electric vehicles, with reference to instructions in the vehicle manufacturer's service manual. • Understanding of the relevant legal requirements on road and vehicle safety, and environmental protection. 2. Performance (Conduct fault diagnosis on electrified vehicles) • Conduct diagnostic procedures for the abnormal performance of propulsion control and power modulation, such as the substandard responses in driving or/and regeneration power, high electric power consumption rate, noisy and vibrating operation, etc., on electrified vehicles according to the instructions in the vehicle manufacturer's service manual and safety rules as well as the requirements of occupational safety and health and environmental protection, including the use of special equipment and instruments, such as using hand-held testers, chassis dynamometers, and road tests to assist the diagnosis of system components. • Conduct or arrange rectification of defects identified from diagnosis. • Examine the propulsion control and power modulation systems of electrified vehicles accurately and confirm the effectiveness of rectification using instruments and equipment. • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measurement data ◦ Major decisions and the effectiveness

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of accurately conducting fault diagnosis on the abnormal performance of propulsion control and power modulation systems of electrified vehicles according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of conducting or arranging rectification of defects according to diagnostic results; and • Capable of testing various types of electrified vehicles accurately and providing written report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of repairing mechanical and electrical systems of various types of electrified vehicles. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – high voltage training course, or equivalent, and be a competent person in hydrogen fuel cell electric vehicle recognised by the authority concerned when working on fuel cell electric vehicles. (This UoC replaced 108699L3)

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Functional Area - Vehicle Servicing

Title	Check and repair vehicle intelligent control systems and devices
Code	111745L4
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to check, repair and adjust various kinds of advanced driver-assistance systems (ADAS), vehicle intelligent control systems and devices safely according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct basic adjustments and tests on components upon completion of work and provide a work report after the work.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and basic operating principles of vehicle intelligent control systems and devices) • Explain the structure and basic operating principles of ADAS, intelligent control systems and respective devices, such as: ◦ Surround Sensor (Camera, LiDAR, Radar, Sonar) ◦ Autonomous Drive System ◦ Remote Control and Auto Parking Systems ◦ Intelligent Body Stability System ◦ Pre-collision Warning System ◦ Pre-collision Brake System ◦ Smart Parking Assist System ◦ Active Lane Keeping System ◦ Intelligent Lighting System • With reference to the requirements in the service manual provided by the vehicle manufacturer or parts supplier, master the general checking and repairing procedure for various types of vehicle electronic/data control systems and devices. • Understand the relevant legal requirements on road and vehicle safety, and environmental protection.

	2. Performance (Check and repair various types of vehicle electronic control systems and devices) • According to the instructions in the service manual provided by the vehicle manufacturer or parts supplier and the requirements of occupational safety and health as well as that of environmental protection, safely check, repair and adjust various types of vehicle intelligent control systems and devices, including: ◦ Capable of identifying the common faults in various types of vehicle intelligent control systems and devices by visual inspection ◦ Demonstrate general/special service tools and instruments to check and measure various types of vehicle intelligent control systems and devices as well as rectify typical system faults ◦ According to the inspection result, repair the parts of various types of vehicle intelligent control systems and devices as well as circuit/data systems, including dismantling, replacing, reassembling and adjusting relevant system components and accessories ◦ According to the service manual, measure, adjust the operation and effectiveness of ADAS and intelligent control systems, and update the system programme where necessary. • After the rectification, provide a work report focusing on: ◦ Abnormalities ◦ Measurement data ◦ Major decisions and the effectiveness
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of checking, repairing (including programme updates), and adjusting general vehicle intelligent control systems and devices safely according to the instructions in the service manual provided by the vehicle manufacturer or parts supplier and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of conducting basic adjustments and tests on components upon completion of work and providing work report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed extensive knowledge of vehicle electronic and electrical system servicing and IT skills. (This UoC replaced 108729L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Risk assessment, emergency rescue and remedy actions for handling broken-down or damaged electrified vehicles
Code	111746L4
Range	This unit of competency is applicable in and beyond the vehicle service workshops. Practitioners should be able to carry out risk assessments on work safety and system intactness of electrified vehicles safely according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on gas safety, road and vehicle safety, environmental protection, occupational safety and health regulations. They should also be able to handle potential hazards, conduct basic tests on components, and provide written report upon completion of the assessment.
Level	4
Credit	5 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Potential hazards of broken-down and damaged electrified vehicles and the associated preventive measures) • According to the instructions in the corresponding vehicle manufacturer's service manual, explain the potential hazards and preventive measures associated with mechanical/electrical breakdown and damage for electrified vehicles. • Master the use of special service tools and detection devices, personal protection and first-aid equipment for relevant tasks. • Master the risk assessment procedures and technique. • Master the judgement criteria on breakdown or damage condition. • Master intensive knowledge in the construction and operation of different kinds of electrified vehicles, including motorcycles, light and heavy vehicles. • Master the intensive knowledge in emergency rescue and remedy • Understanding of the relevant legal requirements on gas safety, road and vehicle safety, occupational safety and health, and environmental protection.

	2. Performance (Work with mechanical / electrical broken-down and damaged electrified vehicles) • According to the instructions in the corresponding vehicle manufacturer's service manual, judgement criteria and the requirements of gas safety, occupational safety and health, as well as that of environmental protection, safely process the risk assessment, emergency rescue or remedy procedures with mechanical/electrical breakdown and damage of electrified vehicles, such as motorcycles, fuel cell electric, battery electric and hybrid electric vehicles, including: ◦ Analyse the suitability of information about potential hazards affecting the working environment, such as electrical insulation and gas tightness (for fuel-cell electric vehicles only) ◦ Demonstrate risk assessment for handling the rescue or remedy ◦ Demonstrate the power down procedures for the high-voltage sysetm ◦ Identify the rescue and remedy procedures for allowing a safe working environment • Conduct performance and safety review after the risk assessment, rescue or remedy, and provide written report focusing on: ◦ Abnormalities ◦ Measurement data ◦ Major decisions
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting risk assessment procedures to allow a safe emergency rescue, remedy actions and environment for broken-down and damaged electrified vehicles, including motorcycles, fuel cell electric, battery electric and hybrid electric vehicles, according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on gas safety, road and vehicle safety, environmental protection, occupational safety and health regulations; and • Capable of conducting safety reviews on the electrified vehicle and system intactness upon completion of risk assessment, emergency rescue and remedy, and providing written report.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge in the construction and operation of electrified vehicles. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – high voltage training course, or equivalent, and be a competent person in hydrogen fuel cell electric vehicles recognised by the authority concerned in the case of handling the fuel cell electric vehicles.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct the performance check of Rechargeable Energy Storage System (REESS) on electrified vehicles
Code	111747L4
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to check the performance of REESS of electrified vehicles, including fuel cell electric, battery electric and hybrid electric vehicles, according to the special service equipment, instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations masterly. They should also be able to conduct system tests and evaluation and provide written report upon completion of work.
Level	4
Credit	5 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of the REESS on electrified vehicles) • Good understanding of electric and electronic theories and also the principles of electric power transfer and electricity generation. • Master the types of high-voltage batteries adopted by vehicles, their working principles, characteristics, handling procedures, associated safety issues, potential occupational safety and health impacts and dangers, as well as environmental protection concerns. • Master the use of special service tools, personal protection and first-aid equipment for relevant tasks. • Good understanding of the system architectures of REESS of electrified vehicles, its circuitry, the charge and discharge controls, and system protection. • Good understanding of the use of special service equipment, including onboard diagnostics for the system inspection. • Master the inspection procedures for the REESS according to the requirements specified in the corresponding vehicle manufacturer's service manual.

	2. Performance (Conduct performance checking of the REESS on electrified vehicles)
	• According to the instructions in the corresponding vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely execute the system checkup using the correct special service equipment or onboard diagnostics, including
	  ◦ Normal condition of harness, high-voltage cables and connectors of REESS
	  ◦ Insulation of REESS
	  ◦ Normal operation of battery management system (BMS)
	  ◦ Health condition of the high-voltage battery, such as fault memory, charging status, state of charge (SOC), state of health (SOH), etc.
	  ◦ Normal operation of the onboard charging system, the effectiveness of the high-voltage battery energy discharge, and energy recharge, including external power and regeneration
	  ◦ Energy transference for all sub-systems, including the low-voltage battery
	• Properly handle and dispose of the vehicle battery pack according to the corresponding manufacturer's instructions, the requirements of environmental protection, occupational safety and health regulations.
	• Provide written report upon the completion of the REESS checkup, focusing on:
	  ◦ Abnormalities and battery degradation
	  ◦ Measurement data
	  ◦ Summary and recommendations

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of masterly conducting REESS performance checkup using special service equipment, including the high-voltage battery, BMS, onboard charger, cables and connectors, according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of handling the abandoned high-voltage battery pack correctly with compliance to the requirements of environmental protection, occupational safety and health regulations; and • Capable of providing written report with recommendations upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of vehicle electrical and electronic system servicing. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – high voltage training course, or equivalent.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Remove and replace the vehicle high-voltage batteries onboard
Code	111748L4
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to work on functional or potentially functional battery systems and the related high-voltage components in fuel cell electric, battery electric, and hybrid electric vehicles; perform one-for-one replacement of the high-voltage batteries safely according to the instructions in the vehicle manufacturer's service manual, environmental protection, occupational safety and health legislation. They should also be able to reconnect all cables/harness and associated components of the cooling system for the high-voltage batteries and provide written report upon completion of work.
Level	4
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Common faults of the vehicle high-voltage batteries and diagnosis procedures)
	• Identify the common faults of the vehicle high-voltage batteries on:
	  ○ Overheating
	  ○ Deformation after crash
	  ○ Fluid leakage
	  ○ Smoking
	  ○ Soaked
	  ○ Electricity leakage
	• Master the use of special service tools, personal protection and first-aid equipment for relevant tasks.
	• Master the characteristics of cables/harness, interlocking devices of adaptors and the battery cooling system, their removal and replacement procedures, as well as the mounting method of the high-voltage battery pack with reference to the instructions in the manufacturer's service manual.
	• Understand relevant legal requirements on occupational safety and health, road and vehicle safety, and environmental protection.
	
	2. Performance (One-for-one replacement of the high-voltage battery pack onboard)
	• Conduct the one-for-one high-voltage battery pack replacement procedures, including cables / harness and cooling system, with reference to the instructions in the manufacturer's service manual and the requirements concerning occupational health and safety and that of environmental protection, including the use of special tools / equipment to assist the process, after the system power-down is confirmed by the result of special service tools / authorised competent person.
	• Conduct the coding procedures and functional tests after the high-voltage system is reinstated by authorised competent person.
	• Conduct performance and safety inspection after the work and provide written report, focusing on:
	  ○ Abnormalities
	  ○ Measurement data
	  ○ Major decisions and the effectiveness

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting the one-for-one replacement procedures of vehicle high-voltage batteries properly, including cables / harness and cooling system, according to the instructions in the manufacturer's service manual and the relevant requirements on environment protection, occupational safety and health regulations, after the system power-down is confirmed by the result of special service tools / authorised competent person; • Capable of conducting the coding procedures and cooling system inspection for the high-voltage battery correctly, after the high-voltage system is reinstated by authorised competent person; and • Capable of conducting safety and functional tests, and providing working report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of the high-voltage batteries of electric and hybrid vehicles. The practitioner concerned should be a recognised competent person in electrified vehicle services, such as a registered vehicle mechanic who has completed an electric vehicle – high voltage training course, or equivalent. (This UoC replaced 108725L3)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct risk assessment on vehicle servicing work
Code	111749L4
Range	This unit of competency is applicable in vehicle service workplaces. Practitioners should be able to conduct risk assessments on the operations of vehicle servicing and provide suggestions for improvement according to the regulations related to occupational safety and health. They should also be able to update the risk assessment report and related documents.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Risk assessment on vehicle servicing work) • Good understanding of relevant regulations / guidelines for conducting risk assessment on occupational safety and health. • Master the organisational policy on occupational safety and health. • Be familiar with the operations of vehicle servicing, including the working procedures, manpower, equipment and workplace setup. • Good understanding of the methodology for risk assessment. 2. Performance (Assess the risk of vehicle servicing work) • Conduct risk assessment on the operation of vehicle servicing in accordance with the guidelines of the corresponding manufacturer's vehicle service manual, instructions of regulations related to occupational safety and health as well as organisational operation policy, such as ◦ Collect information related to the operation of vehicle servicing, including the proper working procedures and methodology, competency level and capability of operator, well-maintained and suitable tools and equipment, and the proper setup of the workplace; ◦ Analyse the potential hazards caused by the operation of vehicle servicing and propose related solving solutions; ◦ Analyse various parameter variations and estimate the respective impact so as to determine the risk level, such as the severity, frequency of hazards, etc.; ◦ Make suggestions for improvement according to risk assessment and analysis results; ◦ Compile a risk assessment report; ◦ Update the risk assessment report and related documents. • Reflect to seniors for comments on the risk assessment system and the improvement proposal. • Ascertain that the risk assessment on vehicle servicing work can meet relevant regulations of occupational safety and health.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of assessing the risk of vehicle servicing operation in accordance with the guidelines of the corresponding manufacturer's vehicle service manual, instructions of regulations related to

	occupational safety and health, and organisational operation policy; • Capable of compiling a risk assessment report and updating related documents; and • Capable of reflecting the opinions to seniors on the risk assessment system and improvement proposal.
Remark	The credit value of this unit of competency assumes that the practitioner has already possessed extensive knowledge on the operations of vehicle servicing. The major legislations/rules involved in this unit of competency are as follows: • Factories and Industrial Undertakings Ordinance • Occupational Safety and Health Ordinance (This UoC replaced 108731L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master complicated techniques of the power systems on combustion engine vehicles
Code	111750L4
Range	This unit of competency is applicable to the technicians working at vehicle service and technical departments. Practitioners should be able to obtain a thorough understanding of the operating principles of various types of power systems on combustion engine vehicles and their impact on power output and fuel consumption, and to inspect and diagnose complicated system faults efficiently and accurately according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations.
Level	4
Credit	9 *(For Reference Only)*
Competency	**Performance Requirements**

	1. Knowledge (Power generation of internal combustion engines)
	• Fuel:
	  ◦ Good understanding of the characteristics of different fuels (e.g., petrol, diesel, liquefied petroleum gas, biofuels, natural gas and hydrogen), including heating value, combustibility, anti-knock property, boiling point and combustion temperature.
	  ◦ Good understanding of related sciences of chemistry, fluid and heat, including basic knowledge in safety aspects
	  ◦ Good understanding of combustion theory and the principle of power generation
	  ◦ Master the conditions and processes of combustion for different fuel types performing in internal combustion engines, and understand the factors affecting combustion efficiency and heat releasing rate
	  ◦ Good understanding of the methods and processes of power generation by internal combustion engines
	  ◦ Good understanding of the factors affecting engine power output
	• Engine design:
	  ◦ Master the structure, materials and functions of various components
	  ◦ Good understanding of the configuration of various movable components and the principle of dynamic balance
	  ◦ Master the relationship between engine setting and relevant specifications, such as capacity, compression ratio, bore-stroke ratio, intake efficiency, engine speed, quantity of mixture, mean effective pressure, torque, power, revolving resistance, etc.
	  ◦ Good understanding of the methods to increase engine power output and their application limits, such as breathing efficiency, ignition and fuel injection timings
	  ◦ Good understanding of the principles of devices enhancing breathing efficiency, such as variable intake and exhaust tract lengths, variable valve timing and lift, and matching of pressure charging system with engine
	  ◦ Good understanding of the principles of engine working temperature control and reduction of movable component wear
	  ◦ Good understanding of the principle of fuel metering for various types of engines, to optimise power output and comply with the requirements of exhaust emissions
	  ◦ Master the basic principles of controlling or treatment of engine pollutants, such as exhaust gas recirculation and after-treatment devices, etc.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of obtaining a thorough understanding of the structure, functions and operating principles of various types of power systems, including engines, their subsystems and related components, so as to enhance the efficiency and accuracy of inspection and diagnosis of complicated system faults; • Capable of mastering the principles of power generation by internal combustion engines, and the impact of factors such as efficiencies of intake, exhaust, and combustion, fuel quality, etc. on the performance of power output to facilitate technical problem-solving; • Capable of solving the complicated technical problems in relation to the power systems of combustion engine vehicles safely, such as excessive fuel consumption and emission of pollutants, noisy operation, power degradation and rough running, stalling and startup failure according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; and • Capable of compiling written reports covering preventive measures, instructions on inspection and maintenance, as well as providing suggestions for improvement, in accordance with the specific defects found in respective power systems.
Remark	The credit value for this competency unit assumes that the practitioner has already acquired extensive knowledge of automotive combustion engines, associated repair and diagnostic procedures.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Execute performance tests on vehicles
Code	111751L4
Range	This unit of competency is applicable to the engineering staff in the vehicle service and inspection departments. Practitioners should be able to execute performance tests on vehicles according to testing procedures and methods established by the organisation, so as to ascertain the serviceability of vehicles.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Procedures of performance tests for various vehicle types) • Master the vehicle performance test procedures and methods established by the organisation. • Master specifications of vehicles and the standard parameters of performance tests (e.g., the manufacturer standard, approved international standard and respective regulations). • Master the operation, maintenance and calibration of various kinds of equipment for vehicle testing. 2. Performance (Execute performance tests for various vehicle types) • Execute the performance test procedures and record all data in qualified workplace equipped with adequate facilities according to the characteristics and standards of various testing items, including but not limited to: ◦ braking efficiency, steering response, riding comfort and cornering stability ◦ vehicle body tilt ◦ illumination and aim alignment ◦ engine power, fuel consumption and exhaust emission ◦ working noise ◦ automatic shift ◦ driving stability ◦ advanced driver-assistant system ◦ traction battery efficiency and state of health (electrified vehicle specific) ◦ traction motor power output and regeneration (electrified vehicle specific) ◦ fuel cell efficiency and hydrogen consumption (fuel cell electric vehicle specific) • Review the efficiency of the testing procedures, such as workflow, accuracy and human resources and compile report to make improvement suggestions on the testing or measuring methods for submission to seniors.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of choosing and operating the suitable testing equipment and facilities for the performance tests; • Capable of executing vehicle performance tests (including the preparation before the test and environmental requirements) according to the testing procedures and methods established by the

	organization, and recording all relevant data for submission to senior engineering staff to ascertain the serviceability of vehicles; and • Capable of compiling reports to make improvement suggestions on the testing procedures and measuring methods for efficient and reliable testing results.
Remark	The credit value of this competency unit assumes that the practitioner has possessed a good understanding of the structure, operation, working principle and diagnosis of each vehicle system.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Verify the cases of vehicle insurance claims
Code	111752L4
Range	This unit of competency is applicable to the assessors of damage, who are entrusted by the insurance company for vehicle insurance claims. Practitioners should be able to verify the cases of vehicle insurance claims by simple visual inspection.
Level	4
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (The terms of insurance policy)
	• Good understanding of every detail of the terms of the vehicle insurance policy, such as:
	  ○ Period of the insurance coverage
	  ○ The insured vehicle's particulars
	  ○ Scope of insurance coverage and exclusions
	  ○ Driver/insurer/car owner's information
	• Master the terms of the vehicle insurance policy, judge its validity, coverage, the rights and obligations of all parties concerned.
	• Good understanding of typical relevant documents such as vehicle registration documents, insurance policies, police records, etc., to be able to identify the authenticity of documents.
	• Be familiar with the Road Safety Ordinance to understand the rights and obligations of road users.
	2. Performance (Verify cases of insurance claims)
	• Being capable of employing good communication skills to meet with the claimants or witnesses related to the cases; retrieve police or hospital records, etc.; collect related information from different locations to get an understanding of the time, location, environment, the course of the incident, the people involved, the nature and causes of the accident, etc.; and make preliminary analysis on the accident to reject fraudulent insurance claims.
	• Check the vehicle to verify that it is the one insured in accordance with the relevant documents, such as the vehicle registration document, etc., and is the damaged vehicle located on the site of the incident. Report the discrepancy to the authority concerned to handle and follow up.
	• Examine the vehicle involved according to objective evidence, such as official records, etc., on site where the damaged vehicle is located to verify that the claim is within the insurance coverage.
	• Examine the details of the policy terms according to established evidence and verify that the claimant is within the insurance coverage of the respective insurance policy.
	• Disregard the pressure from the claimant, the insurance company, vehicle servicing practitioner and respective executive staff and their inter-relationship to make a fair, just, honest, objective and independent assessment and make decision impartially.
	• Uphold noble morality and integrity to safeguard an independent and professional image.
	• Protect the legal rights of both the claimant and the insurance company.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of employing good communication skills to collect extensive information and evidence related to the claims for vehicle insurance at the site where the damaged vehicle is located, analysing the time, location, people, the vehicle involved, environmental factors, etc. of the incident to judge whether the case was reasonable and rejecting any fraudulent insurance claims, or confirming the inclusion within the scope of the insurance coverage; • Capable of examining the details of policy terms and verifying that the claims filed by the claimants are within insurance coverage according to established evidence; and • Capable of upholding noble morality and integrity to make a fair, just, honest and objective assessment and making decisions impartially to safeguard the legal rights of all parties concerned.
Remark	The credit value of this competency unit assumes that the practitioner already possesses extensive knowledge of automobile construction and understand the working principle of various vehicle systems. (This UoC replaced 108754L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Coordinate insurance claims of vehicle damage
Code	111753L4
Range	This unit of competency is applicable to the assessors of damage, who are entrusted by the insurance company or customers for vehicle insurance claims. Practitioners should be able to collect and analyse the information relating to the incident of vehicle damage, identify the responsibility of the claimant, write objective vehicle damage assessment report and coordinate among the claimant, vehicle service provider and the insurance company.
Level	4
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (The terms of insurance policy)
	• For comprehensive insurance claims, practitioners should master the terms of the vehicle insurance policy in detail, such as:
	  ◦ Scope of insurance coverage and exclusions
	  ◦ The upper limit of compensation
	  ◦ The responsibility of the claimant
	  ◦ Depreciation rate
	  ◦ Fraudulent identification
	• Good understanding of the validity and coverage of the insurance policy as well as the rights and obligations of all parties concerned.
	• Understand the content of the documents related to typical vehicle damage assessment, such as police record of the accident, photos taken on site, video clips of the dashboard camera onboard or surveillance camera all around the site, quotations of servicing estimates, etc., to facilitate analysis and decision-making.

	2. Performance (Communication skills and information integration) • Be familiar with various price information, such as the market price of used cars, the cost for reconditioned spare parts, the total amount required for vehicle servicing, etc., to assess the salvage value of the damaged vehicle; and understand the responsibility to be borne by the claimant for the calculation of total compensation amount according to the terms of the insurance policy. • If the insurance claim is established, practitioners should be capable of employing good negotiation techniques to communicate effectively with the parties concerned, including the claimant, the servicing workshop, and the insurance company, etc., to arrive at a compensation amount acceptable to all parties. • Master general imaging techniques, such as drawing and photography, to clearly record the images or photographs/short videos to facilitate the writing of assessment report on vehicle damage. • Employ good clerical skills to integrate various information, such as the official record of accidents, suspicious points of fraudulent declaration, professional evaluation reports, photographs, video clips of dashboard camera onboard or surveillance camera, the course of the accident, time, place, environment, people involved, the details of the vehicle, etc., for preparing a clear and objective report on insurance claims according to the requirements of the respective insurance company or customers. • Coordinate the claimant, the vehicle servicing provider and the insurance company during the entire process of the case. • Disregard the pressure of the claimant, the insurance company, the vehicle servicing practitioner and the respective executive staff and their inter-relationship to make a fair, just, honest, objective and independent assessment and make a decision impartially. • Uphold noble morality and integrity to safeguard an impartial and professional image. • Ensure that the legal rights of both the claimant and the insurance company are protected.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding thoroughly various price information to assess the salvage value of the damaged vehicle and identifying the responsibility of the claimant; • Capable of calculating the total amount of compensation according to the terms of the policy and making a compensation proposal acceptable to all parties concerned through negotiation and coordination; • Capable of exercising good clerical skills and imaging techniques etc., to prepare a clear and impartial report on insurance claims and coordinating all parties concerned during the entire process of the case; and • Capable of upholding noble morality and integrity to make a fair, just, honest and objective assessment and making decision to safeguard the legal rights of all parties concerned.
Remark	The credit value of this unit of competency assumes that the practitioner has already possessed the capability to assess the maintenance cost for accidental damage of vehicles. (This UoC replaced 108756L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of chassis stability control
Code	111754L4
Range	This unit of competency is applicable to technicians working in vehicle service and inspection departments. Practitioners should be able to master the knowledge of various chassis control systems to enhance the efficiency of inspection and fault diagnosis, and effectively solve the complicated technical problems of vehicle stability.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Chassis stability control) • Good understanding of the principles of wheel speed and stability controls. • Good understanding of the effects of rolling condition of wheels on slip ratio, adhesion and overall performance of vehicle, such as tyre wear, wheel speed and vehicle stability. • Master the basic factors and possible methods of vehicle deceleration control, as well as their performance and applicability, such as the resistance from wheels, retardation device, and engine rotational resistance. • Master various control methods for vehicle stability and their applicability, such as wheel resistance and power distribution ratio. • Master the working principles of chassis control systems. • Master the relationship, structure, functions, operating methods, control principles (including hydraulic, air pressure and electricity, etc.) and standard parameters of various systems (including related mechanical and electronically controlled components), such as: ◦ Brake systems, including anti-lock devices ◦ Traction control systems, including braking and engine power regulation devices ◦ Yaw control systems, including power regulation devices

	2. Performance (Inspection, fault diagnosis and analysis of the performance of vehicle controls) • Conduct inspection, fault diagnosis and analysis procedures according to the fault symptoms (including recurrent and intermittent phenomena) of brake systems (including retarders) and related components. • Conduct inspection, fault diagnosis and analysis procedures on the traction control system and related components according to the instability symptoms (including recurrent and intermittent phenomena) during acceleration. • Conduct fault inspection or diagnosis procedures on the yaw control system according to the instability symptoms (including recurrent and intermittent phenomena) when high-speed turning. • Review the causes of defects and diagnostic methods; submit a report to seniors covering preventive measures, instructions on inspection and maintenance as well as suggestions for improvement. • Capable of ascertaining the performance of brake systems, including anti-lock function, such as efficiency and balance, etc., according to respective legislative requirements. • Capable of ascertaining the right choice of tyres according to respective legislative requirements.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering various types of chassis control systems, their structures, functions, operating methods and control principles of related components, to enhance the efficiency and accuracy of inspection and complicated fault diagnosis; • Capable of mastering the principles of speed and stability as well as the effects of slip ratio, adhesion of tyres, braking force, engine resistance and power distribution, etc., on the performance of stability control to solve the complicated technical problems of vehicle stability effectively and accurately; and • Capable of compiling reports covering preventive measures, instructions on inspection and maintenance, as well as providing suggestions for improvement, etc., according to the specific defects found in respective chassis stability control systems.
Remark	The credit value for this competency unit assumes that the practitioner has already possessed extensive knowledge of automotive principle, vehicle repair and testing procedures. (This UoC replaced 108735L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of suspension systems
Code	111755L4
Range	This unit of competency is applicable to technicians working in vehicle service and inspection departments. Practitioners should be able to master the effect of the suspension system on vehicle ride comfort and stability to enhance the efficiency and accuracy of inspection and complicated fault diagnosis.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Various suspension systems and driving stability) • Good understanding of the affecting factors overcoming the driving vibration, such as tyres, seats, suspension setup, spring stiffness and damping coefficient. • Good understanding of the effects of the centre of gravity of the vehicle and suspension system design on driving stability, such as the change of wheel alignment and wheel span, pitching during speed change, instantaneous roll centre, roll axis, roll steer, etc. • Master the structures, functions, controlling methods, operating principles and standard parameters of various systems and related components, e.g., electromagnetic, hydraulic or gas pressure actuators and sensors, such as: ◦ independent suspension and rigid axle suspension, including tandem axle and lift axle ◦ stiffness control of metal and air springs ◦ damping coefficient control of the shock absorber ◦ yaw rate control and anti-roll devices

	2. Performance (Inspection, fault diagnosis and analysis of the suspension system performance)
	• Conduct inspection, fault diagnosis and analysis procedures according to the fault symptoms (including recurrent and intermittent defects) of suspension systems and related components, such as:
	  ◦ Degraded ride comfort, including yaw, toss or shock of the vehicle body
	  ◦ Damaged anchoring points or perished bushings for the linkages of suspension system
	  ◦ Abnormal operating noise or vibration
	  ◦ Tilted vehicle body or abnormal ride height
	  ◦ Abnormal tyre wear
	• Conduct inspection, fault diagnosis and analysis procedures on the performance of suspension systems, damping and yawing control, etc., according to symptoms of instability (including recurrent and intermittent defects) when the vehicle is driving, speed changing or high-speed cornering, such as:
	  ◦ Swaying when driving straight ahead
	  ◦ Pitching seriously when changing speed
	  ◦ Excessive body rolling when cornering, yawing when speed changing or steering
	  ◦ Abnormal side-slip
	  ◦ Abnormal steering performance
	• Review the causes of defects and diagnostic methods; submit written report to seniors covering preventive measures, instructions on inspection and maintenance, as well as suggestions for improvement.
	• Ascertain that springs and shock absorbers, etc., can meet safety standards according to respective legislative requirements, such as the free play of suspension linkage joints.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, functions and operating principles of various types of suspension systems (including related components) to enhance the efficiency and accuracy of inspection and complicated fault diagnosis; • Capable of understanding the principles of vehicle ride comfort and stability as well as the affecting factors of vehicle stability, such as wheel alignment, suspension methods, spring stiffness, damping coefficient, instantaneous roll centre and roll steer, to solve the complicated technical problems, such as abnormal noises and driving instability, etc., effectively and accurately; and • Capable of compiling reports covering preventive measures, instructions on inspection and maintenance as well as providing suggestions for improvement, etc., according to the specific defects relating to respective suspension systems.
Remark	The credit for this competency unit assumes that the practitioner already possesses extensive knowledge of automotive technology, vehicle repair and testing procedures. (This UoC replaced 108737L4)

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of transmission systems
Code	111756L4
Range	This unit of competency is applicable to technicians working in vehicle service and inspection departments. Practitioners should be able to master the impact of transmission systems on driving performance and stability to enhance the efficiency and accuracy of inspection and complicated fault diagnosis.
Level	4
Credit	9 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Power transmission) • Good understanding of the working efficiency and application limits of different power transmission methods (including friction, hydraulic, adhesion, gear and electromagnet) • Good understanding of the working efficiency and application limits of different power distribution methods (e.g., friction, hydraulic and gear), and the principle of torque distribution ratio • Good understanding of the performance of transmission systems. • Good understanding of the relationship of engine power output, driving resistance, vehicle speed and accelerating performance. • Master the effects of gearbox, speed reduction / torque increase ratio setting on vehicle performance and fuel consumption. • Good understanding of the effects of transmission fluid quality and characteristics on transmission efficiency, shift control and protection of components. • Good understanding of the working principle and operation of transmission systems. • Master the structure, functions, operating principles and specifications of various kinds of transmission components (including relevant electronic control systems and components). 2. Performance (Inspection, fault diagnosis and analysis on transmission systems) • Conduct inspection, fault diagnosis and analysis procedures according to the fault symptoms (including recurrent and intermittent phenomena) of various types of transmission systems and related components. • Conduct inspection, fault diagnosis and analysis procedures in accordance with fault symptoms of driving performance and stability, such as: ◦ Fail to attain the expected highest speed ◦ Fail to reach expected maximum driving power ◦ Fail to perform the expected slip limitation or lock effect of the differential unit ◦ Abnormal noise or vibration when operating • Analyse the working fluid quality to evaluate the system operating condition • Review the causes of defects and diagnostic methods; submit written report to seniors covering preventive measures, instructions on inspection and maintenance, as well as suggestions for improvement.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, functions, and operating principles of various types of transmission systems, including related components, to enhance the efficiency and accuracy of inspection and complicated fault diagnosis; • Capable of mastering the principle of power transmission as well as the effects of engine power output, driving resistance and speed reduction / torque increase ratio setting on vehicle performance and fuel consumption to solve the complicated technical problems, such as insufficient power output, inaccurate speed changing timing or obtuse response, abnormal tyre wear of traction wheels, operational noise and vibration, etc., effectively and accurately; and • Capable of compiling reports covering preventive measures and instructions on inspection and maintenance, as well as providing suggestions for improvement, etc., according to the specific defects relating to respective transmission systems.
Remark	The credit value for this competency unit assumes that the practitioner already possesses extensive knowledge of automotive technology, vehicle repair and testing procedures. (This UoC replaced 108734L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of electrical and electronic systems
Code	111757L4
Range	This unit of competency is applicable to technicians working at vehicle service and inspection departments. Practitioners should be able to master the working principles of electrical and electronic systems as well as multiplexing, their effects on vehicle performance to enhance the efficiency and accuracy of inspection and diagnosis of vehicle systems.
Level	4
Credit	9 *(For Reference Only)*
Competency	**Performance Requirements**

	1. Knowledge (Relevant electrical and electronic systems) • Master the operating principles and output characteristics of different types of electric motors and electric generators, such as torque, speed and generation of electricity. • Good understanding of the working principles and controlling methods of the starting and charging system of combustion engine vehicles, and the onboard charging system of electrified vehicles • Master the operating principles of various types of electrical and electronic sub-systems, including related components and control systems • Good understanding of the applications of analogue and digital devices and their systems, such as integrated circuits, analogue/digital converters, amplifiers, comparators, microprocessors, etc. • Master the structure, operating principles, output characteristics and applications of sensors and actuators applied on vehicles, such as thermal sensing, pressure responsive, photosensitive, air flow, position, electric current, electromagnetic solenoids of various functions, etc. • Master electronic control principles, including closed-loop control. • Good understanding of the principle of multiplexing for the whole-vehicle control logic and communication protocols of vehicle, such as the controller-area network (CAN), local interconnect network (LIN), FlexRay, media-oriented systems transport (MOST), etc., for signal transmission and the interpretation of bus signals. • Good understanding of the operating principles and applications of various types of electronic control systems and related components, including but not limited to: ◦ Chassis stability control ◦ Cruise control ◦ Supplemental restraint control ◦ Heating, ventilation and air-conditioning control ◦ Transmission control (for combustion engine vehicles) ◦ Engine management (for combustion engine vehicles and hybrid electric vehicles) ◦ Traction motor power control (for electrified vehicles) ◦ Battery power management (for electrified vehicles) ◦ Fuel cell power management (for fuel cell electric vehicles) • Master the application and data analysis skills of various types of measuring/diagnosis equipment, such as oscilloscopes, on-board diagnostic devices, etc.

	2. Performance (Inspection, fault diagnosis and analysis of electrical and electronic systems)
	• Conduct inspection, fault diagnosis and analysis procedures according to fault symptoms of recurrent and intermittent defects of the electronic control systems, including but not limited to
	  ◦ Power system defects of combustion engine vehicles, such as stalling, weak acceleration, rough engine running, excessive fuel consumption, etc.
	  ◦ Power system defects of electrified vehicles, such as weak acceleration, lack of power, abnormal noise in operation, excessive hydrogen or electricity consumption, inappropriate power regeneration, etc.
	  ◦ Transmission system defects, such as incorrect shift points, incorrect power splitting, harsh gear shifting, inoperative slip limitation, etc.
	  ◦ Chassis stability control system defects, such as ineffective or inaccurate auto brake function, inaccurate lane keep function, inoperative anti-lock brake, acceleration skidding, unstable high-speed cornering, etc.
	  ◦ Cruise control system defects, such as inoperative or inaccurate speed control, etc.
	  ◦ Heat, ventilation and air-conditioning system defects, such as ineffective temperature control and ventilation effects, etc.
	  ◦ Supplemental restraint system warnings and unintended deployment
	• Conduct inspection, fault diagnosis and analysis procedures according to fault symptoms of recurrent and intermittent defects of the vehicle multiplexing bus and related components, such as failure or distortion of signal transmission, optical fibre damage, etc.
	• Conduct inspection, fault diagnosis and analysis procedures according to fault symptoms, including recurrent and intermittent phenomena and visual warnings, of electrical systems, such as the starting system and charging system of combustion engine vehicles, heating, ventilation and air conditioning systems, vehicle body electrical devices, onboard charging system of electrified vehicles, etc.
	• Review the causes of defects and diagnostic methods; submit written report to seniors covering preventive measures, instructions on inspection and maintenance as well as suggestions for improvement.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, functions, controlling and operating principles of various electrical and electronic systems to enhance the efficiency and accuracy of inspection and complicated fault diagnosis; • Capable of mastering electrical and electronic theories as well as the interpretation of bus signals of the multiplexing system to solve the complicated technical problems, such as engine stalling, heating, ventilation and air conditioning failure, unstable or inoperative system communication, weak traction motor power and low onboard charging efficiency of electrified vehicles, etc., effectively and accurately; and • Capable of compiling reports covering preventive measures, instructions on inspection and maintenance as well as providing suggestions for improvement, etc., according to the specific defects relating to respective electrical and electronic systems.

Remark	The credit value for this competency unit assumes that the practitioner possesses extensive knowledge of automotive technology, combustion engine and electrified vehicle repair and testing procedures. When conducting the work on electrified vehicles, the practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent. The servicing process of electrified vehicles should be under the high-voltage system power-down condition and is confirmed by the checking result of special service tools/authorised competent person. If the live high-voltage system is involved during the operation, the practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – high voltage training course, or equivalent. (This UoC replaced 108738L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of power systems on hybrid electric vehicles
Code	111758L4
Range	This unit of competency is applicable to technicians working at vehicle service and inspection departments. Practitioners should be able to master the operating principles of various types of hybrid electric vehicle systems to enhance the efficiency and accuracy of inspection and complicated fault diagnosis.
Level	4
Credit	3 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Power system of hybrid electric vehicles)
	• Master the use of special service tools, personal protection and first-aid equipment for relevant tasks.
	• The principles of electrical and electrochemical engineering:
	  ◦ Master basic theories of electricity and electrochemistry
	  ◦ Good understanding of the working principles of electric motors, generators and alternators, their output characteristics, and relevant electric power supply control methods
	  ◦ Understand the performance, structure, operating principles, characteristics, safety precautions, recycling measures and applicative limitations of different kinds of secondary batteries, including but not limited to lead-acid batteries, nickel-based batteries and lithium-ion batteries
	• Electric energy management:
	  ◦ Good understanding of the methods of battery charging and energy control, traction power and regeneration regulation, and associated thermal control management, the structure and operating principles of all related components
	• Power systems of various types of hybrid electric vehicles:
	  ◦ Master the definition, operating characteristics, structure and operating mode control of various types of hybrid systems, such as plug-in hybrid, power hybrid and mild hybrid, the operating relationship among engine, alternator and traction motor under different modes of operation
	  ◦ Good understanding of the structure and operating principles of power-splitting devices of the power hybrid systems
	  ◦ Master the operating and control principles of combustion engines as well as their sub-systems and components, such as fuel metering, emission control, etc.
	  ◦ Master the control principles of electric power supply and regeneration as well as the structure, functions and operating principles of their related circuits and components
	  ◦ Good understanding of the electric power supply, including external power charging, and control methods of traction motors and generators

	2. Performance (Inspection, fault diagnosis and analysis of hybrid electric vehicle system performance)
	• Conduct inspection, fault diagnosis and analysis procedures according to fault symptoms (including recurrent or intermittent defects) of power and transmission systems, their auxiliary systems and related components, such as:
	  ◦ Engine defects, such as stalling, insufficient power, weak acceleration, rough engine running or excessive fuel consumption, etc.
	  ◦ Declining charging and discharging efficiency of the traction battery, including the efficiency of electricity regeneration and the onboard charging unit for external power input
	  ◦ Unstable control of engine power cut-in and cut-out patterns
	  ◦ Abnormal operating temperature, such as traction motor, traction battery, power electronics, engine, etc.
	  ◦ Declining acceleration power and speed of vehicle
	  ◦ Occurrence of abnormal engine and traction motor operating noise or vibration
	• Review the causes of defects and the associated diagnostic methods; submit written report to seniors covering preventive measures, instructions on inspection and maintenance, as well as suggestions for improvement.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, functions, control and operating principles of hybrid electric vehicle systems (including traction battery and engine), their auxiliary systems and related components to enhance the efficiency and accuracy of inspection and complicated fault diagnosis; • Capable of mastering the characteristics of hybrid electric vehicle systems as well as the factors affecting vehicle power output and charging performance, such as efficiency of electrical energy management and thermal management, traction motor and engine controls, etc., to solve the complicated technical problems effectively and accurately, including high fuel consumption, battery performance decay, lack of vehicle power output, and noisy operation; and • Capable of compiling report covering preventive measures and compiling instructions on inspection and maintenance, as well as providing suggestions for improvement, etc., according to specific defects found in respective power systems.
Remark	The credit for this competency unit assumes that the practitioner already possesses extensive knowledge of hybrid electric vehicles and is familiar with the use of special service tools/equipment and the application of diagnostic principles. When working on the high-voltage electrical systems, the practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent, and the servicing process should be under the high-voltage system power-down condition, which is confirmed by the checking result of special service tools / authorised competent person. If the live high-voltage system is involved during the operation, the practitioner concerned should be a recognized competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – high voltage training course, or equivalent. The major ordinance involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of Vehicles) Ordinance • Occupational Safety and Health Ordinance (This UoC replaced 108741L4)

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of power systems on battery electric vehicles
Code	111759L4
Range	This unit of competency is applicable to technicians working at vehicle service and inspection departments. Practitioners should be able to master the operating principles of various types of battery electric vehicle systems to enhance the efficiency and accuracy of inspection and fault diagnosis.
Level	4
Credit	5 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Power system of battery electric vehicles)
	• Master the use of special service tools, personal protection and first-aid equipment for relevant tasks.
	• The principles of electrical and electrochemical engineering:
	  ◦ Master basic theories of electricity and electrochemistry
	  ◦ Good understanding of the working principles of electric motors, generators and alternators, their output characteristics, and relevant electric power supply control methods
	  ◦ Understand the performance, structure, operating principles, characteristics, safety precautions, recycle measures and applicative limitations of different kinds of secondary batteries, including but not limited to lead acid batteries, sodium-based batteries and lithium-ion batteries
	• Electric energy management:
	  ◦ Good understanding of the methods of battery charging and energy control, traction power and regeneration regulation, and associated thermal control management, the structure and operating principles of all related components
	• Power systems of battery electric vehicles:
	  ◦ Good understanding of the layout, characteristics, structure and operating principles of different powertrains
	  ◦ Master the control principles of electricity supply and regeneration as well as the structure, functions and the common faulty functions of their related circuits and components

	2. Performance (Inspection, fault diagnosis and performance analysis of battery electric vehicle system)
	• Conduct inspection, fault diagnosis and analysis procedures according to fault symptoms (including recurrent or intermittent defects) of electric systems and related components, including but not limited to:
	  ◦ Efficiency declining in charging and discharging of battery, including the efficiency of electricity regeneration
	  ◦ Declining in acceleration and speed of vehicle
	  ◦ Shortened driving range
	  ◦ Inaccurate or unstable vehicle speed control
	  ◦ Abnormal operating temperature, such as traction motor, traction battery, power electronics, etc.
	  ◦ Occurrence of abnormal operating noise or vibration from the power system
	  ◦ Review the causes of defects and diagnostic methods; submit written report to seniors covering preventive measures, instructions on inspection and maintenance, as well as suggestions for improvement.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, functions, control and operating principles of the battery electric vehicle system, the rechargeable energy storage system including the onboard charger, and related sub-systems/components to enhance the efficiency and accuracy of inspection and complicated fault diagnosis; • Capable of mastering the characteristics of battery electric vehicle system output as well as the affecting factors, such as motor control efficiency, electric energy management and regeneration, thermal management, etc., to solve the complicated technical problems effectively and accurately, including noisy operation, driving range deficiency, hesitating or weak acceleration, and abnormal regeneration effect; and • Capable of compiling report covering preventive measures, compiling instructions on inspection and maintenance, and providing suggestions for improvement, etc., according to specific defects found in respective power systems.
Remark	The credit for this competency unit assumes that the practitioner already possesses extensive knowledge of battery electric vehicles and is familiar with the use of special service tools/equipment and the application of diagnostic principles. When working on the high-voltage electrical systems, the practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent, and the servicing process should be under the high-voltage system power-down condition, which is confirmed by the checking result of special service tools / authorised competent person. If the live high-voltage system is involved during the operation, the practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – high voltage training course, or equivalent. The major ordinance involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of Vehicles) Ordinance • Occupational Safety and Health Ordinance (This UoC replaced 108741L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of power systems on hydrogen fuel cell electric vehicles
Code	111760L4
Range	This unit of competency is applicable to technicians working at the designated work area of vehicle service and inspection departments. Practitioners should be able to master the operating principles of the power systems on hydrogen fuel cell electric vehicles to enhance the efficiency and accuracy of inspection and fault diagnosis.
Level	4
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Power systems of hydrogen fuel cell electric vehicles)
	• Master the use of special service tools, personal protection and first-aid equipment for relevant tasks.
	• The principles of electrical and electrochemical engineering:
	  ○ Master basic theories of electricity and electrochemistry
	  ○ Good understanding of the working principles of electric motors, generators and alternators, their output characteristics, and relevant electric power control methods
	  ○ Understand the performance, structure, operating principles, characteristics, safety precautions, recycling measures and applicative limitations of different kinds of secondary batteries, including but not limited to sodium-based batteries and lithium-ion batteries
	  ○ Good understanding of the working principle of hydrogen fuel cell and the output characteristic under various working conditions.
	  ○ Understand the performance, structure, safety precautions, recycling measures and applicative limitations of the hydrogen fuel cell equipped on vehicles
	• Electrical energy management:
	  ○ Good understanding of the methods of battery energy storage and control, traction power and power regeneration regulation, and associated thermal control management, the structure and operating principles of all related components
	  ○ Good understanding of the affecting parameters on the electrical energy output of a fuel cell unit, such as the operating temperature and humidity controls, fuel and oxidant supplies against load demand, etc.
	• Power system of hydrogen fuel cell electric vehicles:
	  ○ Understanding of the structure, characteristics, installation and associated safety setup for the hydrogen storage tanks onboard
	  ○ Master the control principles of electricity supply and regeneration as well as the structure, functions and the common faulty functions of their related circuits and components
	  ○ Good understanding of the external electric power charging and control
	  ○ Good understanding of the layout, operation and characteristics of hydrogen fuel cell systems and the associated sub-system components, including but not limited to leakage detection, storage, pressure regulation, humidity control, and oxidant supply

	2. Performance (Inspection, fault diagnosis and performance analysis of hydrogen fuel cell electric vehicle system) • Conduct inspection, fault diagnosis and analysis procedures according to fault symptoms (including recurrent or intermittent defects) of the hydrogen fuel cell electric system and related components, such as: ◦ Declining charging and discharging efficiency of battery, including the efficiency of electricity regeneration ◦ Declining conversion efficiency of fuel cell unit ◦ Increasing concentration of hydrogen in exhaust ◦ Declining in acceleration power, load and speed response of vehicle ◦ Shortened driving range and excessive fuel consumption ◦ Inaccurate or unstable vehicle speed control ◦ Abnormal operating temperature of components, such as the traction motor, battery, power electronics, fuel cell system, etc. ◦ Occurrence of abnormal operating noise or vibration ◦ Review the causes of defects and diagnostic methods; submit written report to seniors covering preventive measures, instructions on inspection and maintenance, as well as suggestions for improvement.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, functions, control and operating principles of the power system of hydrogen fuel cell electric vehicles, including fuel and electrical energy storage, their auxiliary systems and related components to enhance the efficiency and accuracy of inspection and fault diagnosis; • Capable of mastering the principle of electric drive systems as well as the factors affecting vehicle power output, such as fuel cell system and motor efficiency, fuel and electrical energy management, electricity regeneration, humidity and thermal management, etc., to solve the complicated technical problems effectively and accurately, such as increasing hydrogen consumption for a given load, excessive hydrogen exhaust, hesitating load response and weak acceleration power, abnormal noisy operation and vibration; and • Capable of compiling report covering preventive measures, compiling instructions on inspection and maintenance, as well as providing suggestions for improvement, etc., according to specific defects found in the respective power system.
Remark	The credit for this competency unit assumes that the practitioner already possesses extensive knowledge of hydrogen fuel cell electric vehicles and the operational characteristics of associated systems and components. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low voltage training course, or equivalent, and be a competent person in hydrogen fuel cell electric vehicles recognised by the authority concerned; the process should be under the high-voltage system power-down condition and confirmed by the checking result of special service tools/authorised competent person. When live high-voltage system is involved in the work, the practitioner shall possess of a recognised competency/qualification, such as the electric vehicle – high voltage training course, or equivalent. The major ordinance involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Ordinance • Gas Safety Ordinance • Occupational Safety and Health Ordinance (This UoC replaced 108741L4)

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct revalidation process for the legality and serviceability of vehicular liquefied petroleum gas tank
Code	111761L4
Range	This unit of competency is applicable to technicians working at vehicular liquefied petroleum gas (LPG) tank servicing/inspection workshops. Practitioners should be able to master the recognised testing procedures for vehicular LPG tanks, the use of associated testing gear/equipment and be familiar with the associated routine maintenance in accordance with the guidelines of the corresponding manufacturer's manual. They should also be capable of providing written evaluation report upon the completion of the test.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Nature, characteristics, handling procedures and safety precautions of liquefied petroleum gas (LPG), principles of LPG system operation, and the legislative requirements on pressure vessel certification tests and procedures) • Master the physical natures and characteristics of LPG and the constitution of LPG used on local vehicle systems. • Master the handling procedures and safety precautions of LPG in accordance with the associated legislation and the requirements of occupational safety and health, environmental protection, road and vehicle safety. • Good understanding of the structure and operating principles of the LPG systems onboard, including the system components and LPG tank. • Good understanding of the workshop setup, including safety, leakage detection and warning system, the operation and maintenance of testing gear/equipment. • Master the principles of LPG transfer in liquid phase, flaring, pressure tests and fuel refill upon tests. • Good understanding of the handling procedures for the abandoned LPG tanks. • Master the legislative requirements on the revalidation of vehicular LPG tanks and the associated test setup in accordance with the requirements on pressure vessels and LPG tanks set by the local authority concerned, such as the Electrical and Mechanical Services Department, the Occupational, Safety and Health Council, etc.

	2. Performance (test procedures of vehicular liquefied petroleum gas (LPG) tank for revalidation, check and repair the components attached to the LPG tank • Conduct routine maintenance for the legality and proper function of revalidation test gear/equipment and peripheral setup, including pressure gauge calibration, and the associated safety system in the workshop. • Conduct the pre-pressure test procedures, including but not limited to leakage detection, visual inspection, remaining liquid fuel transfer and residual gas flaring. • Remove, inspect and repair all components attached to the LPG tank. • Conduct the hydraulic test procedures and visual inspection for the LPG tank at the designated pressure and holding time, and the gas leak test procedures after the replacement of all attached parts/components under precautionary measures. • Conduct the procedures for purging into service, and the revalidation particulars marking on the tank. • Review the testing procedures and equipment setup, and compile a written report for the test result and abnormalities, and suggestions for improvement.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the maintenance and operating procedures of various liquefied petroleum gas (LPG) tank testing gear/equipment including safety systems in the workshop; • Capable of good understanding the principles of pressure vessel testing procedures; • Capable of safely conducting the pre-pressure test, pressure tests, purging into service and fuel refilling procedures for the LPG tank in accordance with designated guidelines on the working environment, equipment and safety setup, testing conditions, and the requirements of occupational safety and health, environmental protection, road and vehicle safety; • Capable of removing, inspecting, repairing and carefully replacing all the components attached to the LPG tank; • Capable of evaluating the serviceability of LPG tank and associated components by the testing result and the adherence to the standards concerned; and • Capable of compiling a written report for the test results and abnormalities upon completion of work, and suggestions for improvement.
Remark	The credit value of this competency unit assumes that the practitioner already possesses extensive knowledge of pressure vessel inspection, handling of liquefied petroleum gas (LPG), and understanding of the operation of LPG engines and associated systems. The revalidation process should be performed by a recognised competent person (Class 6) in LPG vehicle under the supervision of recognised competent person (Class 1) in LPG vehicle. The major legislations/rules involved in this unit of competency are as follows: • Road Traffic Regulations • Gas Safety Ordinance • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of exhaust emission tests
Code	111762L4
Range	This unit of competency is applicable to technicians working at vehicle servicing workshops and test laboratories. Practitioners should be able to master various recognised emission test procedures and the use of approved inspection / maintenance-grade exhaust emission test gear / equipment, and be familiar with the associated routine maintenance in accordance with the guidelines of the corresponding manufacturer's manual. They should also be capable of providing evaluation report upon the completion of test.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Natures of pollutants in vehicle exhaust, principles of emission measurement, and the legislative requirements on exhaust emission control) • Master the pollutants generated during normal and abnormal fuel oxidation processes. • Good understanding of the combustion process, fuel type and quality effects on the concentrations of various pollutants. • Good understanding of the harm caused by various kinds of pollutants. • Understanding of basic pollutant detection principles, including but not limited to chemiluminescence, non-dispersive infrared, flame ionisation, electromagnetic radiation and light scattering, their applications such as portable emission measurement system, remote sensing system, static test, dynamometer test, etc. • Good understanding of the basic principles of various pollutant measurement procedures using inspection/maintenance (I/M) grade emission test gear/equipment, including but not limited to free acceleration test, lug-down test and transient dynamometer test, their measurement conditions, levels of credibility, applications and limitations. • Good understanding of the use of the I/M grade exhaust emission test gear/equipment and associated routine calibrations and functional checks. • Master the legislative requirements regarding the emission standards of various exhaust pollutants set by the local authorities, such as Environmental Protection Department, Transport Department, etc.

	2. Performance (vehicle exhaust pollutant measurement and result recognition) • Conduct routine maintenance for the I/M grade emission test gear/equipment, including but not limited to system functional tests, calibration, control software updates and proper functioning of peripheral setup. • Select the appropriate emission test method and associated test gear/equipment for complying with the specific objectives of inspection, such as performance analysis, roadside emission checks, annual safety inspections, etc. • Conduct the specified exhaust emission tests in accordance with the designated procedures, equipment and safety setup, testing conditions, and the requirements of occupational safety and health, environmental protection, and road and vehicle safety. • Record the measurement data from emission tests and evaluate their validity and compliance with standards. • Continuously review the testing conditions, equipment and procedures during the process, and compile the testing report covering the emission testing results, conformity to the relevant requirements, and suggestions for improvement.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of good understanding of the basic principles of various pollutant measurements, the maintenance and operating procedures of various inspection/maintenance-grade emission measuring gear/equipment; • Capable of determining the appropriate emission test method and associated gear/equipment for complying with the specific objectives of inspection; • Capable of conducting the specified exhaust emission test in accordance with designated procedures, equipment and safety setup, testing conditions, and the requirements of occupational safety and health, environmental protection, and road and vehicle safety; • Capable of evaluating the validity of testing results and the adherence to the standards concerned; and • Capable of compiling the test report covering the emission test results, conformity to the relevant requirements, and suggestions for improvement.
Remark	The credit value of this competency unit assumes that the practitioner has already possessed extensive knowledge of automobile combustion and emissions technology, quantitative analysis and gas measurement, and understanding of the information technology, operation of engines, and associated systems.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of the fuel supply system on liquefied petroleum gas vehicles
Code	111763L4
Range	This unit of competency is applicable at the designated liquefied petroleum gas vehicle work bay in vehicle service workshops. Practitioners should be able to check and repair various types of vehicular liquefied petroleum gas supply systems according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on occupational safety and health, environmental protection and gas safety. They should also be able to conduct performance and leakage tests on the system upon completion of work.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various types of vehicular liquefied petroleum gas (LPG) supply systems) • Comprehend the natures, characteristics, handling and safety precautions of local automotive LPG. • Master the structure, operation and control principles of LPG supply systems and the associated components, including storage tanks, sensors and actuators. • Explain the change of phases and pressure of LPG in the system under different system operating conditions. • Understand the effects of different LPG supply systems on power output and emission control. • Understand the application and working principle of safety gears for LPG system service, such as leakage detection and warning, etc. • Recognise the limitation of the scope of vehicular LPG system services with respect to the guidelines of gas safety. • Comprehend the procedure and safety awareness of checking and repairing various types of LPG supply systems and associated system components. • Understanding of the relevant legal requirements on occupational safety and health, road and vehicle safety, gas safety and environmental protection.

	2. Performance (Check and repair various types of vehicular liquefied petroleum gas (LPG) supply systems) • According to the instructions in the vehicle manufacturer's service manual, the Road Traffic Ordinances of Hong Kong and the relevant requirements on occupational safety and health, gas safety and environmental protection, safely check the proper operation of the LPG supply systems, repair and replace the associated faulty system components, including: ◦ Apply the approved combustible gas detection device for gas leakage test; ◦ Identify the general problems of various types of LPG supply systems by visual inspection and live tests; ◦ Apply the appropriated special testing devices to identify the faulty functions of LPG supply systems and associated components leading to various sub-standard performance, such as power deficiency, rough idling, sluggish acceleration, excessive LPG consumption, poor emission quality, etc.; ◦ Conduct the proper purging procedures before dismantling any of the LPG components and pipelines; ◦ Rectify the faulty system components, including but not limited to dismantlement, replacement, reassembly, adjustment and testing of the LPG supply system components, such as the regulator, sensors, actuators, etc., to eliminate typical system failure and restore the performance. • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions and their effectiveness
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of conducting the leakage detection and purging procedures correctly for liquefied petroleum gas (LPG) vehicles at the designated workplace in advance of any dismantling work. • Capable of identifying the faulty functions of the fuel supply system on LPG vehicles leading to various sub-standard performance, including but not limited to power development, fuel consumption and emission quality. • Capable of checking and repairing various types of vehicular LPG supply systems and associated components for LPG vehicles and applying special testing/detection devices to properly conduct functional tests on the system components, including regulators, sensors and actuators, and the effectiveness of system controls, according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on occupational safety and health and environmental protection. • Capable of conducting the system performance test and safety inspection, and providing written report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses comprehensive knowledge of liquefied petroleum gas supply systems and associated components, inspection and servicing skills, application of safety and testing equipment, and awareness of fuel handling. The work should be performed by a recognised competent person (Class 6) in LPG vehicle. The major legislations/rules involved in this unit of competency are as follows: • Dangerous Goods Ordinance • Occupational Safety and Health Ordinance • Gas safety Ordinance • Road Traffic Regulations

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Estimate the repair cost for accidental damage of vehicles
Code	111764L4
Range	This unit of competency is applicable to the assessors of damage for vehicle insurance. Practitioners should be able to estimate the repair cost of damaged vehicles objectively by visual inspection at different situations/locations with the aid of appropriate information.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle repairing) • Good understanding of the structure and functions of vehicle components and familiarity with the detailed functions, assembling methods, mechanical and electrical functions, etc. of various types of vehicle bodies, powertrains and under-chassis systems. • Master the procedures, methods, work duration and materials required for rectification of vehicle body, structure and vehicle parts, and the surface treatment of vehicle body in polishing, painting and wrapping. 2. Performance (Estimate the repair cost for accidental damage of vehicles) • Conduct visual inspection on the damaged vehicle with reference to the factors of time, place, people, involving vehicle and environment to accurately list out the damage of the vehicle due to the incident as well as those damages which are not caused by the incident. • Be familiar with the source of supply, price, quantity of supply and related information of various kinds of spare parts to estimate the budget for replacement, repair and fine-tuning of the damaged vehicle parts, and make appropriate suggestions. • Assess the man-hours required for the working procedures stated on the repair list according to the instructions on servicing man-hours specified by the manufacturers or standard flat rate guide along with the exercise of objective and reasonable judgement. • Calculate the cost of each working procedure in terms of the labour cost of servicing work and the cost of spare parts and consumables, and thereby make a detailed repair list to come up with the total amount of the entire repair cost objectively, as well as the weighting of responsibility for the repair cost bearing between/amongst the parties concerned. • Make use of computer quotation software, internet, or electronic information database to retrieve relevant information whenever necessary so as to enhance the efficiency and accuracy in the estimation of the repair cost.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of listing out in detail accurately the damage of the vehicle body and other vehicle parts at the incident by visual inspection and making reasonable recommendations on replacement and repair according to the depreciation of the vehicle and individual damaged items;

	• Capable of understanding the price and quantity of supply of various kinds of spare parts to make appropriate suggestions; • Capable of estimating the labour required for servicing according to the labour time manual published by the manufacturer or other acceptable standard flat rate guide; and summing up the cost of labour, parts and consumables etc., to make a detailed list of the service items and the total estimate for repairing; and • Capable of making use of relevant computer quotation software when necessary to enhance the efficiency and accuracy of cost estimation.
Remark	The credit value of this competency unit assumes that the practitioner already possesses comprehensive knowledge of vehicle construction, working principles of all the vehicle systems and the maintenance of the vehicle body. (This UoC replaced 108755L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose and rectify vehicle exhaust emission control systems
Code	111765L4
Range	This unit of competency is applicable to technicians working in vehicle servicing and inspection departments. With reference to the guidelines of the corresponding manufacturer's manual, practitioners should be able to master the operating principles of various exhaust emission control systems and their effectiveness in pollutant treatment in order to enhance the efficiency and accuracy of inspection and fault diagnosis of exhaust emission problems.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Generation of exhaust pollutants) • Master the change of concentrations of pollutants generated during normal and abnormal fuel oxidation processes. • Good understanding of the impact of different fuel types and qualities on the generation of pollutants. • Good understanding of the harm of various kinds of pollutants. • Master the causes and sources of various kinds of pollutants generated in the internal combustion engines using different fuel types. • Good understanding of the impact of different engine lubricant types and qualities on the exhaust pollutant emission. • Good understanding of the reduction methods of exhaust pollutant generation, including driving patterns, engine design, exhaust gas recirculation and combustion control, and after-treatment of exhaust emissions. • Good understanding of the testing methods of exhaust pollutant emission level, including the selection and use of related equipment as well as measuring methods. • Master the standards of vehicle manufacturers on pollutant emission levels, and governing regulations set by the Environmental Protection Department. • Understand the structure, functions, control methods and operating principles of various emission control setups/systems, such as exhaust gas recirculation, valve timing control, evaporative emission control, catalytic converters, particulate filters, NOx adsorbers, selective catalytic reduction, various sensors for exhaust temperature, pressure, oxygen and nitrogen oxide, etc.

	2. Performance (Emission control systems diagnosis and rectification) • Inspect the normal operation and effectiveness of various emission control systems, including emission reduction and exhaust after-treatment, with reference to the guidelines of the respective manufacturer's manual and standards of the governing authority. • Diagnose the engine performance and emission control setups/systems with specialised tools and equipment to locate the faulty components leading to excessive pollutant concentrations and conduct rectification procedures. • Review the causes of defects and diagnostic methods; compile report covering preventive measures, instructions on inspection and maintenance as well as suggestions for improvement.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, functions, control methods and operating principles of various kinds of emission control systems (including related components and subsystems) to enhance the efficiency and accuracy of inspection and fault diagnosis with reference to the guidelines of the respective manufacturer's manual and standards of governing authority; • Capable of mastering the factors affecting pollutant emission concentrations, such as the causes of pollutant generation, emission control methods and engine design features, to solve the complicated emission problems effectively and accurately; • Capable of rectifying the faulty components to resume the normal performance of the emission control setups/systems; and • Capable of compiling reports covering preventive measures, compiling instructions on inspection and routine maintenance as well as providing suggestions for improvement, etc., according to specific defects found in respective emission control systems.
Remark	The credit value of this competency unit assumes that the practitioner has already recognised the engine operation and combustion technologies and possessed comprehensive knowledge of automobile emission control design and corresponding system diagnosis. (This UoC replaced 108742L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Analyse the electric vehicle system faults and execute the rectifying procedures
Code	111766L4
Range	This unit of competency is applicable in electrified vehicle service workshops. Practitioners should be able to master the diagnostic procedures of the electric vehicle systems, and the one-for-one replacement procedures of the high-voltage battery pack onboard according to the instructions in the corresponding vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to provide written reports upon completion of work.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structures and operating principles of various electric vehicle systems and associated components) • Distinguish the structures and operating principles of various electric vehicle systems, such as the powertrain, rechargeable energy storage system (REESS), onboard charger (OBC), heating, ventilation and air conditioning (HVAC), etc. • Conversant with the principles of whole-vehicle control logic and communication protocols of electric vehicles, the application of controller area network (CAN) for signal transmission and the interpretation of bus signals. • Master the differentiation of voltage levels of electrical systems, the hazards and safety rules in the handling of the high-voltage systems onboard. • Master the functions and application of special service tools, personal protection and first-aid equipment for relevant tasks. • Master the functions and applications of diagnostic and testing instruments and equipment for electric vehicles, such as on-board diagnostic systems, insulation testers, etc. • Familiar with the common faults of high-voltage operating systems onboard and the fault diagnosis procedure for the abnormal performance of powertrain, OBC, REESS and HVAC systems of electric vehicles, with reference to instructions in the corresponding vehicle manufacturer's service manual and safety rules. • Good understanding of the relevant legal requirements of occupational safety and health, road and vehicle safety, and environmental protection.

	2. Performance (High-voltage operating systems inspection and diagnosis and battery pack replacement) • Compare the working principles of various high-voltage operating systems onboard, such as the powertrain, OBC, REESS, HVAC, etc. • Differentiate the architecture of whole-vehicle logic control, communication protocol and the interpretation of CAN bus signals. • Correctly differentiate the voltage levels of various operating systems, including cables. • Masterfully apply the personal protective and first-aid equipment, with reference to the legal requirements of occupational safety and health, road and vehicle safety, and environmental protection, for the system diagnosis and high-voltage battery pack replacement processes. • Efficiently examine the normal operation and performance of various high-voltage operating systems of electric vehicles, such as the powertrain, OBC, REESS, HVAC, etc., with reference to the instructions in the corresponding vehicle manufacturer's service manual and safety rules. • Compare the application of special service tools, diagnostic and testing equipment and instruments and associated setup procedures for system diagnosis and high-voltage battery pack replacement with reference to instructions in the corresponding vehicle manufacturer's service manual and safety rules. • Effectively conduct the fault diagnosis procedures for the substandard performance of high-voltage operating systems onboard, including but not limited to system insulation, powertrain and charging efficiencies, battery health and air conditioning efficiency, with reference to instructions in the corresponding vehicle manufacturer's service manual and safety rules. • Analyse the diagnostic results of high-volage operating systems to locate the faulty functions and associated components. • Provide a written report on the system diagnostic results, their root causes, corrective and preventive actions. • Perform the high-voltage battery pack removal and replacement procedures (one for one), including cables/harness and cooling system, with reference to the instructions in the manufacturer's service manual and the requirements concerning occupational health and safety and that of environmental protection, after the system power-down is confirmed by the result of special service tools / authorised competent person. • Conduct the coding procedures, safety and functional tests after the high-voltage system is reinstated.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of differentiating the working principles and architecture of whole-vehicle logic control, communication protocols and the interpretation of CAN bus signals; • Capable of contrasting the voltage levels of operating systems, including cables onboard; • Capable of applying relevant personal protective equipment and first-aid equipment, special tools and diagnostic instruments for high-voltage battery pack replacement or high-voltage operating system diagnosis, with reference to instructions in the corresponding vehicle manufacturer's service manual and safety rules; • Capable of examining the normal operation and performance of various high-voltage operating systems onboard, including but not limited to the powertrain, OBC, REESS, and HVAC, with reference to the instructions in the corresponding vehicle manufacturer's service manual and safety rules; • Capable of analysing the causes of defective high-voltage operating systems onboard, such as the powertrain, REESS, OBC, HVAC, etc., to locate the faulty functions and associated components leading to the substandard system performance, with reference to the instructions in the corresponding vehicle manufacturer's service manual and safety rules; • Capable of providing a written report on the system diagnostic results, their root causes, corrective and preventive actions; • Capable of executing the removal and one-for-one replacement procedures of the vehicle high-voltage battery pack properly, including cables / harness and cooling system, according to the instructions in the manufacturer's service manual and the relevant requirements on environmental protection,

	occupational safety and health regulations, after the system power-down is confirmed by the result of special service tools / authorised competent person; • Capable of executing the coding procedures and cooling system inspection for the high-voltage battery pack correctly after the high-voltage power system is reinstated; and • Capable of executing safety and functional tests, and providing working reports upon completion of replacement work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses good knowledge of high-voltage operating systems and battery packs on electric vehicles. The major ordinance involved in this unit of competency is as follows: • Relevant ordinances to the Road Traffic (Construction and Maintenance of vehicles) Regulations • Occupational Safety and Health

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Supply-chain Management in Automotive Industry
Code	111774L4
Range	This unit of competency is applicable to the practitioners of the parts department department with the following responsibilities : To manage the day-to-day operational aspects of a supply chain within the automotive industry. It involves coordinating the flow of goods, information, and finances from procurement of raw materials and components to the delivery of finished vehicles or parts to end-users. Applies to individuals in automobile spare parts management roles, such as Supply Chain Supervisors, Logistics Coordinators, Parts Managers, Production Supervisors, and Inventory Controllers, who are responsible for ensuring the efficient, cost-effective, and timely operation of the automotive supply chain. They perform tasks related to planning, scheduling, inventory management, and supplier relationships with a significant degree of autonomy and responsibility for the work outcomes of others.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Knowledge of Supply-chain Management in Automotive Industry) • Automotive Supply Chain Structure: Knowledge of the multi-tiered supply chain, and the flow of components for vehicle assembly and the aftermarket. • Inventory Management Principles: Understand the Economic Order Quantity (EOQ), ABC analysis, safety stock, and First-In-First-Out (FIFO). • Understand the Logistics and Transport Modes • Lean and Quality Principles: Understanding of JIT, Kaizen, and quality management standards. • Regulatory Knowledge: Awareness of relevant regulations including customs compliance, import/export controls, and dangerous goods handling. • Understanding of Supplier Relationship Management (SRM)

	2. Performance (Manage inventory and warehouse operations)
	• Plan and source materials for automotive operations
	  ◦ Understand the interpret production schedules and parts demand forecasts to determine material requirements.
	  ◦ Able to liaise with established and potential suppliers to source components, materials, and services according to specifications.
	  ◦ Able to process purchase orders and manage supplier agreements to ensure continuity of supply.
	  ◦ Able to apply Just-in-Time (JIT) and lean principles to sourcing activities to minimise inventory holding costs.
	• Manage inventory and warehouse operations
	  ◦ Able to implement inventory control procedures to maintain optimal stock levels and minimise stockouts or excess inventory.
	  ◦ Able to supervise warehouse activities, including receiving, put-away, storage, picking, packing, and dispatch.
	  ◦ Able to coordinate cycle counts and stocktakes, and investigate and reconcile discrepancies.
	  ◦ Able to manage the handling and storage of specific automotive components, including hazardous goods and sensitive electronic parts.
	• Coordinate logistics and distribution activities
	  ◦ Able to schedule and monitor the transportation of materials and finished goods through inbound and outbound logistics.
	  ◦ Able to select and manage relationships with freight carriers and third-party logistics (3PL) providers.
	  ◦ Able to ensure all documentation (e.g., bills of lading, customs paperwork, dangerous goods declarations) is accurately completed.
	  ◦ Able to track shipments and implement contingency plans to resolve logistical delays or disruptions.
	• Monitor and improve supply chain performance
	  ◦ Able to collect and analyse key performance indicators (KPIs) such as on-time delivery, inventory turnover, and order accuracy.
	  ◦ Able to identify issues and inefficiencies within the supply chain operation and investigate their root causes.
	  ◦ Able to implement and monitor continuous improvement actions to enhance supply chain efficiency and reduce costs.
	  ◦ Able to report on supply chain performance to management and other relevant stakeholders.
	• Management Skills
	  ◦ Understanding of advanced skills to analyse inventory data, calculate KPIs (e.g., fill rates, freight costs), manage budgets, and interpret financial reports.
	  ◦ Able to interpret complex documents including purchase orders, shipping contracts, supplier agreements, and safety data sheets (SDS).
	  ◦ Digital Literacy: Understanding of Proficiency in using Enterprise Resource Planning (ERP) systems, Warehouse Management Systems (WMS), and supply chain software for tracking and management.
	  ◦ Problem-solving: Ability to anticipate potential disruptions, analyse root causes of issues (e.g., using 5 Whys), and develop effective solutions.
	  ◦ Communication and Interpersonal Skills: Able to lead a team, negotiate with suppliers and carriers, and communicate clearly with internal stakeholders.

Assessment Criteria	Demonstrate the ability and knowledge to complete the tasks • Able to develop a Supply Chain Management Plan for a specific automotive scenario (e.g., launching a new parts line, managing seasonal demand for a dealership). • Able to analyse a set of inventory data to identify slow-moving and fast-moving parts, recommend stock level adjustments, and calculate the financial impact.

	• Able to resolve a complex simulated disruption (e.g., a supplier production halt, a port strike delaying critical components) by developing and presenting a contingency plan. • Able to prepare and deliver a performance report to management, outlining KPIs, key issues, and proposed improvement initiatives. • Able to explain the role of JIT in a vehicle assembly plant and its implications for a logistics supervisor. • Able to describe the key steps in a supplier evaluation and onboarding process. • Understanding of the documents required for international shipping of automotive lithium-ion batteries and comparing and contrasting different inventory valuation methods and their impact on financial reporting.
Remark	The credits value of this suit competency assumes that the practitioner has already possessed basic knowledge on parts management

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	e-Commerce in Automotive Services
Code	111775L4
Range	This unit of competency is applicable to the practitioners of the sales and marketing department with the following responsibilities : Vehicle sales, parts, and services online activities, using platforms to showcase products, offer personalized experiences through AI, and streamline the customer journey with online configurations, financing, and delivery options. Automotive industry-related companies plan and design feasible e-commerce solutions or improvements.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Knowledge of operation in vehicle sales) • Able to identify potential operational, technical, and financial risks in automotive e-commerce projects and propose strategies to address them. • Understand and plan how to apply key technologies and data analytics to automotive e-commerce scenarios to improve operational efficiency and customer experience. 2. Performance (Develop a comprehensive e-commerce business plan) • Ability to present the e-commerce solution to management or potential investors in a professional manner. • Ability to complete a market analysis report detailing the target market's customer profile, competitor e-commerce strategies, and the impact of regulations (such as data privacy and online contracts) on the business. • Ability to utilize professional tools (such as SWOT, PESTLE, and Porter's Five Forces Model) to conduct analysis and provide insightful conclusions. ◦ (SWOT : Strengths, Weaknesses, Opportunities, Threats) ◦ (PESTLE : Polities, Economics, Social, Technology, Environmental) • Develop a comprehensive e-commerce business plan. Content should include: Business model: Selection and design of B2C, B2B, or O2O. (Business to Customers, Business to Business, Online to Offline) • Ability to plan and design a feasible e-commerce solution or improvement plan for an automotive-related business (such as a 4S dealership, parts distributor, or repair shop chain).
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove the ability of: • Platform functionality planning: online repair booking, used car valuation and trading, parts sales, and membership management systems • Customer journey map: Depicting a seamless connection from online touch points to offline service experiences.

	• Marketing and promotion strategy: Specific plans for integrating digital marketing tools such as SEO/SEM, (Search Engine Marketing/Search Engine Optimization) social media, and KOLs (Key Opinion Leader). • Develop the business plan, explain how to integrate: CRM system: for customer relationship management and targeted marketing. • Data analytics: Leveraging online data to optimize inventory (parts), pricing (used cars), or marketing strategies. • Key technologies: AR (Augmented Reality) car viewing, online diagnostic tools, and considerations for integration with DMS (dealer management systems).
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed basic knowledge on automotive industry sales and marketing (This UoC replaced 108604L2)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Exhibit / Display vehicles
Code	111779L4
Range	This unit of competency is applicable to practitioners performing marketing and related duties in the automotive industry. They should be able to employ the techniques of display art and attend to the safety aspects to effectively display vehicles at showrooms/ exhibition venues according to organisational requirements to achieve sales purposes.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Setting of the venues for display of various vehicle types, including electrified vehicles) • Good understanding of the objectives of the setting of showrooms/exhibition venues, such as: ◦ Arousing customers' interests ◦ Stimulating customers' buying desires ◦ Bringing visual enjoyment to customers ◦ Establishing the image of the brand • Good understanding of the restrictions of the showrooms/exhibition venues. • Evaluation of the potential risks of the customers' misconduct / carelessness when experiencing the driving controls

	2. Performance (Display vehicles)
	• Employ the techniques of displaying vehicles, including electrified vehicles, such as:
	  ○ Go with the theme of display according to the requirements of vehicle manufacturers on the brand/product services and the characteristics of the commodities
	  ○ Colour matching
	  ○ Lighting design
	  ○ Decorations for the scene, etc.
	• Understand the theme of the vehicle show
	  ○ Commercialised
	  ○ Livelihood (activities, trend, etc.)
	  ○ Characterised
	  ○ Environmental protection
	• Communicate with the staff of the vehicle showrooms/exhibition venues/advertising companies and the managerial staff of the organisation, and give appropriate working instructions to subordinates after analysis and judgement to facilitate drafting a proposal for a vehicle show.
	• Participate in the entire preparation process of the show and the follow-up actions:
	  ○ Contact advertising companies and follow up on production issues
	  ○ Formulate proposals on vehicle shows
	  ○ Source materials/props etc., for vehicle shows
	• Effectively display vehicles to achieve sales goals.
	• Establish effective measures to prevent the occurrence of any incidents arising from customers' actions, and give clear instruction to the staff concerned for execution.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is: • Capable of mastering the techniques of vehicle exhibition and display, and instructing the drafting of the vehicle show proposal; • Capable of establishing effective measures and managing to prevent the occurrence of incidents arising from customers' misconduct / carelessness; and • Capable of understanding the image of the organisation and the orientation of consumers to facilitate effective exhibition and display of vehicles for achieving sales purposes.
Remark	(This UoC replaced 108600L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Purchase used vehicles
Code	111780L4
Range	This unit of competency is applicable to merchandisers in the department/organisation engaging in the trading used vehicles. Practitioners should be able to make suggestions to seniors on the purchase of used vehicles with commercial value and complete the respective purchasing procedure to match with the organisational operations strategy.
Level	4
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The characteristics of vehicles and the actual market situation of used vehicles) • Master the latest information on different vehicle types, such as market price and demand (including new and used vehicles). • Understand the specifications of vehicles and the regulations governing the sale of vehicles. • Master the supply sources of different types of used vehicles. • Master the handling methods of purchasing documents for used vehicles. • Understand the resources available and risks affordable by the organisation.

	2. Performance (Purchase used vehicles)
	• Based on the actual market situation and organisational resource situation, as well as updated information from the sales department, present to seniors the purchasing suggestions of used vehicle types such as:
	  ◦ Market value
	  ◦ The image of the vehicle type and the brand
	  ◦ Feedback of after-sales services
	  ◦ Market demand
	  ◦ Target customers, etc.
	• Submit evaluation report to seniors on the marginal profits for transaction, to determine if the organisational operations strategy can be matched.
	• Master the determinants for the purchase of target used vehicles, such as:
	  ◦ Year of manufacturing, vehicle body types, seating capacity, and colour
	  ◦ Driving mileage
	  ◦ Conditions of the vehicle body and interior upholstery
	  ◦ Engine capacity
	  ◦ Conditions of engine and transmission system
	  ◦ Energy capacity and state of health of the traction battery (for electrified vehicles)
	  ◦ Power output of traction motor(s) (for electrified vehicle)
	  ◦ Information of first registration, such as a brand-new vehicle imported from the manufacturer, a new parallel imported vehicle or an imported used car, etc.
	  ◦ Additional costs required for the registration of non-local used vehicles
	  ◦ Number of previous owners
	  ◦ Validity period of licence
	  ◦ Accident records
	  ◦ Specification of vehicle (not supplied by local market)
	  ◦ Verify registration information to avoid buying illegally modified vehicles
	  ◦ Check for unsettled penalty or valid restraining order
	• Inspect the vehicles to be purchased and verify the related documents, to ensure the quality of the vehicles and the authenticity of information provided, such as the vehicle identification number.
	• Complete the obligatory transaction document according to relevant regulations governing the sale of vehicles and internal records of the organisation.
	• Transfer the purchased vehicles to the maintenance department for inspection and repair, to ensure the best conditions for sale.
	• Implement contingency measures in the case of special incidents, such as wrong specification or information of vehicles.
	• Review procedural deficiencies in the purchase of used vehicles and be capable of making suggestions for adjustment or improvement.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of making suggestions to seniors on the purchase of used vehicles with commercial value according to the real situation of the used-vehicle market and the determinants of vehicle choosing for meeting organisational operations strategy; • Capable of arranging the maintenance of the purchased vehicle in saleable condition; • Capable of completing relevant record and transaction documents according to established requirements of the organisation and the vehicle trading regulations of the authority concerned; and • Capable of reviewing procedural deficiencies in the purchase of used vehicles and making suggestions to optimise the respective procedure.

Remark	The credit value of this unit of competency assumes that the practitioner concerned has already possessed the knowledge of vehicles, including relevant regulations and procurement. (This UoC replaced 108583L4)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Compile financial reports applicable to the automotive industry
Code	108561L5
Range	This unit of competency is applicable to practitioners performing financial duties in the automotive industry. Practitioners should be able to use appropriate report format to complete various kinds of financial reports, including financial statements, internal audit reports, risk and return analysis reports and financial budget reports.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Format and key points of financial statement reports in the automotive industry) • Master the key points and purposes of the industry's financial statement reports. • Master the format of the industry's financial statement reports, commonly used technical vocabularies and specific terms of vehicles. • Master financial management concept. 2. Performance (Compile financial reports) • Use appropriate report format to compile various kinds of financial reports applicable to the automotive industry, such as: ◦ Financial statements ◦ Internal audit reports ◦ Risk and return analysis reports ◦ Financial budget reports • Use charts and graphs to enhance and enrich the content of various kinds of reports, including bar graph, histogram, pie chart/graph and flow chart.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the industry's financial management concept as well as the format and key points of financial reports; and • Capable of compiling financial reports applicable to the automotive industry.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Formulate financial management plans
Code	108562L5
Range	This unit of competency is applicable in workplaces relevant to the operation management of the automotive industry. Practitioners should be able to analyze various kinds of financial management issues as well as formulating financial management plans with reference to the respective information/data such as cost, expenditure and profit, facilitating the organisation to achieve maximum financial return.
Level	5
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Financial management theory and strategy)
	• Master financial management theory and strategy.
	  ◦ The objectives of financial management
	  ◦ The functions of the monetary market
	• Master the analysis of financial statements, including:
	  ◦ Balance sheet
	  ◦ Profit and loss statements
	  ◦ Cash flow statements
	  ◦ Forecast statements
	• Good understanding of the methods of financial planning and forecast.
	• Good understanding of capital budget, such as:
	  ◦ Principles of investment
	  ◦ Net present value method
	  ◦ Discounted payback period method
	  ◦ Internal rate of return method
	  ◦ Profitability index
	• Master the calculation of project cash flow, including:
	  ◦ Relevant cash flow
	  ◦ Additional cash flow
	  ◦ Working cash flow
	• Good understanding of the risk and return
	  ◦ System risk and non-system risk
	  ◦ The relation between risk and expected return
	  ◦ The risk in foreign exchange
	• Good understanding of government policy on vehicle tax.
	• Good understanding of risk management concept.
	• Good understanding of the application of information technology.

	2. Performance (Formulate relevant financial management plans applicable to the automotive industry)
	• Analyse financial statements.
	• Formulate capital budget stra.egy
	• Formulate cost control strategy.
	• Formulate risk and return management strategy.
	• Implement financial planning, such as:
	  ◦ Control the business cycle and cash flow
	  ◦ Understand cash budgeting
	• Formulate the management strategy of working capital, such as:
	  ◦ Control cash income and expenses
	  ◦ Control inventory
	  ◦ Draw up credits policy and conduct analysis
	• Draw up risk management plans.
	• Formulate plans to apply information technology in financial management.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of master financial management theory; and • Capable of effectively formulating financial management plans by employing information technology and risk management strategy with respect to the actual operation.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Assess the risks of accident at work within the workplace
Code	108563L5
Range	This unit of competency is applicable to the management level of different servicing workshops and warehouses of the automotive industry. Practitioners should be able to assess the risks of accident at work during daily operation at the workplaces to safeguard the interest of the organisation.
Level	5
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (The risks of the workplaces)
	• Master the details of the daily operation in one's workplace and the risks involved.
	• Good understanding of standard risk analysis methods such as
	  ◦ HAZOP (Hazard of Operability),
	  ◦ QRA (Quality Risk Assessment),
	  ◦ FMEA (Failure Modes and Effects Analysis)
	  ◦ FTA (Fault Tree Analysis)
	• Good understanding of respective occupational safety and health, environmental protection as well as labour regulations; and understand the responsibilities of employers and employee.
	2. Performance (Conduct risk assessment)
	• Analyse the details of the operation in the workplace and list out the potential hazard and risks such as traffic accident at the workshop, accidents involving the vehicle lifting equipment, leakage of dangerous chemicals, fire and certain working procedure e.g. welding, painting, etc.; assess the probability and consequences of individual potential danger as well as the loss and hazard it will cause.
	• Set the order of priority; list out the issues that need to be handled; make suggestions for improvement; and assist in establishing emergency and contingency measur.s
	• Analyse the operating details of the workplace, list out the potential failure modes such as vehicle damages, inventory loss, damages on essential equipment, computer failure, etc.; assess the probability and consequences of the risk and the loss involved; review existing management system and make suggestions for improvement when necessary.
	• Choose suitable risk assessment pattern to conduct data analysis according to all accidents and operation failure cases; find out the causes of frequent accidents and complete risk assessment report.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioners being assessed shall prove that he/she is: • Capable of fully understanding the details of the operation in one's workplace; listing out potential hazard and failure operation modes; assessing the probability and consequences of the risks and the loss involved; • Capable of setting the order of priority; listing out the potential risks that need to be handled; making suggestions for improvement; and

	• Capable of analyzing all accidents and operation failure cases to find out the causes of frequent accidents and completing risk assessment report.
Remark	The relevant legislations involved in this unit of competency are as follows: • Occupational Safety and Health Ordinance • Factories and Industrial Undertakings Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Formulate a comprehensive scheme for organisational operation management
Code	108564L5
Range	This unit of competency is applicable to the senior management of sizable enterprises in the automotive industry. Practitioners should be able to formulate a comprehensive scheme for operation management for workplaces under their supervision in a business environment that continually pursues operational efficiency.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The operation of the automotive industry) • Master the overall operation of the automotive industry and be familiar with the relative competitiveness and market positioning of competitors in the industry. • Know about modern scientific management techniques such as Six- Sigma, 5-S practice, Total Quality Management or the management system specified by the vehicle manufacturer. • Be familiar with the extensive information of the organisation such as scope of business, tangible and intangible assets, internal structure, allocation of human resources, quality management, income and expenditure status, profit level, vehicle sales and details of operation. 2. Performance (Formulate operation scheme) • Master the impact of external factors such as economic development, etc. on the entire automotive industry and analyse the relative competitiveness of the organisation in the automotive industry by comparing its internal operating income and expenditure. • Set benchmark for allocation of resources in accordance with business operation and development, such as the structure of human resources and the proportion of vehicle sales, after-sales services. • Mastering the details of organisational management system such as financial accounting, quality control systems, information management, sales, services, etc.; formulate plans for division of work so as to facilitate inter-departmental coordination. • Be familiar with internal information management systems and management styles; capable of defining the data collected from key monitoring points; organise resources and collect data to conduct analysis, draw up improvement plan and monitor the operation.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is: • Capable of mastering the overall market of the vehicle industry to understand the competitors and the general situation, and the relative strengths of the organisation; • Capable of familiarizing the management system to set benchmark for allocation of resources and drawing up plans for division of work that can facilitate inter-departmental coordination; and • Capable of adopting modern scientific management methods and information management system to establish key monitoring points; collect data, conduct analysis, draw up improvement proposals and monitor the operation.

Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Assess human resources market and establish remuneration system
Code	108571L5
Range	This unit of competency is applicable to the human resources management of sizable organisations in the automotive industry. Practitioners should be able to master changes in the manpower market of the automotive industry and establishing the most appropriate remuneration system and levels with regard to the overall operation strategy of the organization, being competitive for retention of talents.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The concept of remuneration system) • Master the extensive theory of human resources management. • Master organisational structure and departmental functions. • Master the current situation of the human resources market of local automotive industry. • Good understanding of the characteristics of different remuneration methods such as salaries, bonus, monetary reward, vacation, pension, medical benefits, promotion opportunity, job satisfaction. • Good understanding of local labour ordinance. 2. Performance (Establish remuneration system and implement the respective procedure) • Determine the grade/level of each post according to the structure, size of the organisation and the requirements of different posts. • Set the standard for various kinds of professional qualifications including local, overseas and internal professional training. • Assess the current situation of the human resources market of the automotive industry and compare it with the organisation to which one belongs to. • Determine the package of remuneration system according to the actual situation of different ranks and positions such as salary, vacation, pension, medical benefits, bonus, other benefits. • Ensure that the remuneration level of all ranks is established with full consideration of various internal and external factors and is implemented consistently across the organisation. • Capable of conducting regular reviews to ensure that the pay scale is appealing and exercise with flexibility under special circumstances. • Draw up instructions detailing the pay review mechanism. • Draw up working instructions for respective departments and implement respective administrative procedure. • Capable of ensuring that the established remuneration system compile with the statutory requirements of labour regulations.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioners being assessed shall prove that he/she is:

	• Capable of mastering the concept of human resources management and the situation of the human resources market of the automotive industry; • Capable of determining the most appropriate remuneration level and benefits for different ranks and positions according to overall operation strategy to ensure it has market competitiveness to retain talents; • Capable of establishing an appropriate remuneration system according to the size of the organization; and implementing it across the organisation; and • Capable of ensuring that the established remuneration system complies with the statutory requirements of labour ordinance.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate sales estimates of vehicle products
Code	108585L5
Range	This unit of competency is applicable to the managerial staff responsible for the marketing of vehicle products (e.g. vehicles, spare parts or repairing services). Practitioners should be able to anticipate the achievable sales targets within a specified period by analysing and assessing the various factors affecting sales performance to formulate sales estimates.
Level	5
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Vehicle products and sales estimates)
	• Master the factors to be taken into consideration when assessing the sales of vehicle products, including:
	  ◦ Sales growth rate
	  ▪ The sales data of previous year
	  ▪ Past sales data
	  ▪ The business turnover of competitors
	  ◦ Organisational factors
	  ▪ Sales strategy
	  ▪ Market research
	  ▪ Market share
	  ▪ Number of showrooms, servicing centres and retailing outlets
	  ◦ Environmental factors
	  ▪ The location and areas of the showrooms, servicing centres and retailing outlets
	  ▪ The maturity period of the outlets
	  ▪ The business days
	  ◦ Affecting factors
	  ▪ Economic situation (e.g. the rise and fall of commodity prices, consuming inclination and inflation/deflation)
	  ▪ Product variations (e.g. the launch of new models or model stop production, variation of models in the industry)
	  ▪ Special factors (e.g. tax rate and oil price)
	• Master the concept of sales estimates of vehicle products, such as measure, control and anticipate sales condition.

	2. Performance (Formulate sales estimates of vehicle products) • Discuss with the sales and marketing departments to assess the anticipated achievable sales performance of vehicle products. • Formulate sales estimates of vehicle products, including: ◦ Check past business performance of the organisation ◦ Understand the expectation of the vehicle manufacturer on future achievements ◦ Estimate the vehicle supply condition of the vehicle manufacturer ◦ Consider the competitiveness of the products in future market ◦ Formulate strategies that can support overall objectives and business in collaboration with other departments of the organisation ◦ Assess the costs and prices to calculate anticipated profits ◦ Compile aggregated sales financial budget of the organisation for submission to the seniors
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of effectively assessing the sales performance of vehicle products by analysing and assessing the various factors affecting the sales of vehicle products; and • Capable of employing the concept of sales estimates to formulate reasonable sales estimates of vehicle products.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate marketing plans for vehicle products
Code	108586L5
Range	This unit of competency is applicable to the managerial staff responsible for the marketing of vehicle products (e.g. vehicles, spare parts or repairing services). Practitioners should be able to formulate effective marketing plans in accordance with organisational resources and objectives by analysing the competitive environment of the vehicle products market and by employing practical marketing experience to accomplish sales targets.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Market environment and sales of vehicle products) • Good understanding of the competitive environment of the vehicle products market. • Good understanding of the products that can be provided by the vehicle manufacturer and other spare parts suppliers in the planned year. • Good understanding of the sales outlets and sales procedures of vehicle products. • Good understanding of consumer psychology. • Master the concept of the risk of foreign exchange. • Know the Government's environmental protection regulations on vehicle products, such as the preferential tax policy for environment-friendly vehicles. • Master the organisational structure of salespersons in departments. • Good understanding of the information system of the vehicle products market.

	2. Performance (Formulate marketing plans)
	• Formulate effective marketing plans in accordance with the resources and objectives of the vehicle manufacturer, spare parts suppliers and the organisation itself, including:
	  ◦ Assess the competitiveness of the products in the market
	  ◦ Set the market positioning of the products
	  ◦ Identify target customers
	  ◦ Set target price
	  ◦ Identify sales targets
	  ◦ Determine advertising methods in collaboration with the marketing department as well as anticipate and assess the achievable market attentiveness
	  ◦ Select appropriate sales channels
	  ◦ Select sales regions and the size of the sales teams
	  ◦ Establish commission and reward systems
	  ◦ Determine the manpower required for logistic support
	  ◦ Determine the resources required for the entire plan
	  ◦ Coordinate with the service and spare parts departments
	  ◦ Establish the implementation procedure for the marketing plans
	  ◦ Assess the effectiveness of the marketing plans
	• Establish plans for vehicle sales with the utilisation of information technology and internet.
	• Formulate the management and monitoring methods of marketing plans.
	• Formulate financial budget and seek for approval.
	• Recommend the plans to the vehicle manufacturer and the senior level of the organisation to obtain support.
	• Review the effectiveness of the plans upon completion and submit reports to the vehicle manufacturer and the organisation afterwards.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating marketing plans in accordance with organisational resources and objectives and seek support in resources allocation; and • Capable of formulating management and monitoring methods of marketing plans and submitting appropriate reports afterwards.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate market research plans
Code	108593L5
Range	This unit of competency is applicable to the market surveyors of vehicle products (including vehicles, spare parts or vehicle after-sales services). Practitioners should be able to formulate effective market research plans according to organisational needs by employing their practical experience and techniques of collecting and analysing the information obtained from the survey of the vehicle product market to achieve respective organisational objectives.
Level	5
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Techniques for conducting market research on vehicle products)
	• Good understanding of the purposes of market research on vehicle products, such as
	  ○ Introduce and promote new products
	  ○ Explore the market situation of the brands or products
	  ○ Sales and marketing
	• Master market research methods for vehicle products.
	• Good understanding of the information system for vehicle product market.
	2. Performance (Formulate market research plans)
	• Formulate effective market research plans according to organisational needs, including:
	  ○ Determine the objectives of market research
	  ○ Choose market research methods
	  ○ Establish the implementation procedure for the market research plans
	  ○ Assess the effectiveness of the market research plans
	• Establish market research management plan.
	• Establish market research monitoring plan.
	• Formulate plans for collecting and analysing information obtained from the survey of vehicle product market making use of information technology and internet.
	• Make use of the information obtained from the survey to organise and analyse reports.
	• Report respective information to the organisation and/or the vehicle manufacturer and make suggestions on marketing issues.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating effective market research plans according to organisational needs by employing practical experience and techniques of collecting and analysing the information obtained from the survey of the vehicle product market; and • Capable of formulating management and monitoring plans for market research, organising relevant information, submitting report and suggestions to achieve organisational objectives of market research.

Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Sales and Marketing

Title	Write promotion script for the marketing of vehicle products
Code	108594L5
Range	This unit of competency is applicable in workplaces relevant to the sales and marketing of vehicle products. Practitioners should be able to understand thoroughly the contextual functions in marketing creativity and can use appropriate language to write promotion script relating to the sales and marketing of vehicle products.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The format and key points of automotive product sales and marketing documents) • Master thoroughly the contextual functions in marketing creativity. • Good understanding of common terminology and specific terms of the automotive industry. • Master about the format and key points of the promotion script for the sales and marketing of vehicle products. • Good understanding of thoroughly the established format and presentation methods employed by the organisation or the brand. 2. Performance (Write promotion script for the sales and marketing of vehicle products) • Communicate with advertising agencies or other professional copywriters. • Maintain good relationship with the media of the automotive industry. • Employ appropriate language, charts/graphs to write related script according to the operation of the sales and marketing of vehicle products, such as: ◦ Feature articles for publicity purposes ◦ Media plans ◦ Sales reports ◦ Marketing reports ◦ Sales letters and promotion leaflets • Assess the proposals submitted by advertising agencies or other professional copywriters on the content of the script and make amendments.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the format and key points of the promotion script for the sales and marketing of vehicle products; and • Capable of mastering thoroughly the contextual functions in marketing creativity and using appropriate language to write promotion script relating to the sales and marketing of vehicle products or assigning the job to professional people.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Parts Management

Title	Establish a procedure for the return of parts and accessories
Code	108609L5
Range	This unit of competency is applicable in the vehicle parts and accessories sales department, inventory control department and management department. Practitioners should be able to establish procedures for the return of purchase to safeguard the interests of both the organisation and the customers.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Receipt and delivery procedures for auto parts and accessories) • Good understanding of the functions and characteristics of vehicle parts and accessories, such as specification (including international standard and the standard required by the manufacturer), the standard of packaging, delivery, assembling, use, warranty or storage period of goods required by the manufacturer or supplie • Master organisational procedure for handling the receipt and delivery of good 2. Performance (Establish procedures for the return of purchase) • Establish the criteria and handling procedure for return of purchase according to the following circumstances: ◦ Specification of goods ◦ The standard of handling and use of goods required by the manufacturer or supplier, such as approved assembling procedure, warranty or storage period. ◦ The validity of transaction documents ◦ Confirmation of goods • Determine the rank of the persons approving the return of purchase. • Formulate measures to secure the purchase to be returned, such as packaging, delivery and storage. • Prepare documents for monitoring and recording the return of purchase. • Formulate sustainable monitoring measures on the quality of goods. • Establish contingency measures for special cases such as huge bulk of returns. • Review the procedure for return of purchase: ◦ Review the criteria for the return of goods and respective handling procedure and capable of making revision to meet the revised standard required by the manufacturer or supplier on the handling and use of goods ◦ Establish feedback mechanism to provide information relating to records of return of purchase, etc. to the purchasing and warehouse management departments for follow-up action to be taken
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of establishing the criteria for return of purchase and respective handling procedures according to the specification of goods, standard required by the manufacturer or supplier on the

	handling and use of goods and notifying respective departments for follow-up action to be taken; and • Capable of adjusting the criteria and handling procedure for the return of goods according to changes in organisational policy and the standard required by the manufacturer of supplier on the handling and use of goods.
Remark	The credits value of this unit of competency assumes that the practitioner concerned already has possessed the knowledge of vehicle parts and accessories.

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Unit of Competency

Functional Area - Parts Management

Title	Establish the monitoring system for the delivery of parts and accessories
Code	108616L5
Range	This unit of competency is applicable in the vehicle parts and accessories sales department, inventory control department and management department. Practitioners should be able to establish effective methods to monitor the delivery of goods within the territories or across the border so that the delivery process can be completed accurately and speedily.
Level	5
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories and the logistics monitoring methods) • Master the characteristics of vehicle parts and accessories and the delivery requirements. • Master the labelling system of vehicle parts and accessories employed by the organisation and its characteristics. • Identify the characteristics of different transportation devices. • Identify various logistics monitoring systems and their applicability such as the use of monitoring tools like satellite positioning, internet, telephone, log book. 2. Performance (Monitoring the delivery of vehicle parts and accessories) • Establish suitable monitoring procedure and standard according to the nature of goods, transportation methods as well as the region and routes of delivery. • Establish the procedure for communication of internal information. • Establish the procedure for the disclosure of information to the outsiders (e.g. customers). • Establish contingency procedure to cope with special incidents such as losing contact. • Establish the performance indicators for delivery of goods such as zero overdue. • Review the effectiveness of the monitoring system of logistics operation and obtain feedbacks from front-line staff to improve the monitoring methods.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of establishing effective monitoring systems according to the characteristics of auto parts and accessories and the delivery requirements; • Capable of improving the monitoring methods for the delivery of goods according to the effectiveness of the monitoring of logistics operation.
Remark	The credits value of this unit of competency assumes that the practitioner already has possessed the knowledge of logistics.

Specification of Competency Standards
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Unit of Competency

Functional Area - Parts Management

Title	Establish the procedure for stock condemnation
Code	108617L5
Range	This unit of competency is applicable to the practitioners in the inventory monitoring and management department for establishment of effective condemnation procedure according to the conditions and salvage value of different parts and accessories.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Conditions and demand of stock) • Good understanding of the characteristics of stock, such as sales record and the time limit for storage. • Identify the validity of stock, such as damages. • Master with the decay time line of different types of vehicles. • Good understanding of the management methods for different stock. • Master the resources available and risks affordable by the organisation. 2. Performance (Establish the procedure for stock condemnation) • Establish the conditions for condemnation according to the characteristics and salvage value of the stock, such as: ◦ The sales data, life cycles and decay time line of different types of obsolete vehicles and related parts and accessories ◦ The sales opportunity of stock ◦ Damaged or malfunction stock ◦ Balance sales return and storage cost, such as deposition and interests. • Establish the approval procedure for condemnation of stock, such as: ◦ The rank of the responsible staff ◦ Records of items and quantity etc. ◦ Cycle of handling the condemned stock • Establish the handling methods for condemned stock, such as destroy, disintegrate or designated criteria of the waste recovery traders. • Review the effectiveness of the procedure for condemnation of stock, such as the monitoring of condemned items and review regularly stock level of the stored or damaged items to adjust respective strategy and report to the inventory level monitoring department. • Establish contingency procedure for cases such as accumulation of condemned items and unreasonable condemnation.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of establishing the conditions, procedures and destroying methods for condemned stock according to the states and salvage values of different stock items to minimize organisational loss and

	normalize the utilisation of resources; and • Capable of reviewing the effectiveness of the procedure for condemned stock, adjusting the condemnation strategy and optimizing the handling procedure.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Parts Management

Title	Formulate inventory level policy
Code	108618L5
Range	This unit of competency is applicable to the practitioners in the inventory control and management department for the formulation of effective inventory level policy of stock to optimise the utilisation of organisational resources and facilitate sufficient and speedy supply of parts and accessories.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics, demand and of stock and its control) • Good understanding of the characteristics of parts and accessories, such as sales record and storage period of individual stock items. • Master the sales records and life cycles of various types of vehicles. • Good understanding of the management methods for different inventory level. • Good understanding of the ordering strategy for different goods. • Master the resources available and risks affordable by the organisation. 2. Performance (Formulate inventory level policy) • Formulate effective inventory level policy according to the characteristics, management and ordering strategies of different stock, such as: ◦ The sales records and life cycles of different types of vehicles ◦ Evaluation of sales volume, storage period and life cycles of various related parts and accessories ◦ Management factors such as volume, value, functions and transportation of stock ◦ Apply just-in-time buffer stock method ◦ Strive for high frequency and low quantity goods supply condition ◦ Keep a balance between total investment on stock and inventory level • Establish contingency procedure for cases such as shortage of goods and overstocking. • Review the effectiveness of the formulated inventory level policy, such as survey the inventory level regularly, circulation and damage reports, etc., to adjust respective strategy.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating the inventory level policy of different goods according to the characteristics, circulation, inventory level and value, etc. of stock facilitating the organisation to provide the parts and accessories to sales department and servicing workshops with sufficient and speedy supply of parts and accessories by utilising minimum organisational resources; and • Capable of reviewing and optimising inventory level policy according to the inventory level, circulation and damages reports of stock.

Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Parts Management

Title	Establish guidelines to protect the stock
Code	108619L5
Range	This unit of competency is applicable to the practitioners in auto parts and accessories warehouses for the establishment of guidelines according to the characteristics of different goods to protect the goods effectively.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics and protection requirements of vehicles, parts and accessories) • Good understanding of the characteristics of vehicles, parts and accessories. • Master the storage and protection methods for vehicles, parts and accessories. • Good understanding of the characteristics and limitations of different storage premises or regions. • Master the applicability of different protective materials. • Good understanding of the knowledge of occupational safety, health and environmental protection, dangerous goods management and warehouse management. 2. Performance (Protection of stock) • Capable of establishing effective protection guidelines according to the characteristics of different stock, such as: ◦ Identification of the stock categories (general or dangerous goods) ◦ Protection and packaging requirements of the stock (e.g. requirements of protective materials) ◦ Special security requirements of valuable stock (e.g. anti-theft and fire prevention) ◦ Special requirements on the storage environment of stock (e.g. temperature, humidity and shockproof) ◦ The storage methods of stock (e.g. stack-up, up-right and suspension) ◦ Regular inspection system for the stock • Establish the procedure for reporting damages of stock. • Establish performance indicators for the protection of stock, such as damage data. • Establish contingency procedure for cases such as sudden change of storage environment. • Review the effectiveness of the stock protection, and feed respective departments with information for strategies adjustment (e.g. inventory level and purchase).
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of establishing effective guidelines on the storage of stock according to the characteristics of different goods to protect the auto parts and accessories effectively, and storing in suitable premises; • Capable of establishing the procedure for assessing the effectiveness of the guidelines according to the characteristics of different stock items; and

	• Capable of optimising the storage methods according to the effectiveness of goods protection method and making suggestions across different departments.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Parts Management

Title	Formulate purchasing strategy of parts and accessories
Code	108626L5
Range	This unit of competency is applicable to the practitioners in the auto parts and accessories purchasing department for the formulation of effective purchasing strategy and revision of its effectiveness to optimise the utilisation of resources and enhance cost effectiveness for the organisation.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories as well as the actual market situation) • Master the latest information such as the prices of different auto parts and accessories, market demands and market shares. • Good understanding of the standard of goods and respective regulations governing sale • Master the states of sales, return and exchange of different goods. • Good understanding of the specifications and characteristics of different parts and accessories, such as applicable range, utilisation rate and storage period. • Master the specifications of different parts and accessories as well as inventory level requirements. • Good understanding of the quality, availability and stability of goods supply of different parts and accessories suppliers as well as the discounts and terms of conditions offered by them (applicable to the parts and accessories sales agents not affiliated with vehicle agents). • Familiar the resources available and risks affordable by the organisation. 2. Performance (Purchasing strategy of auto parts and accessories) • According to the characteristics of different parts and accessories, market situation, sales records and the employable resources of the organisation, formulate the purchasing strategy of auto parts and accessories applicable to the suppliers of non-designated vehicle agents such as specifications, categories, prices, quantity and the cycles of goods supply, the requirements on the suppliers, including the instructions on the assessment of the applicability of non-original parts and accessories. • According to the sales records of different types of vehicles supplied exclusively by the organisation and the suggestions of the manufacturers, evaluate the demand for different parts and accessories and the employable resources of the organisation, to formulate the purchasing strategy applicable to the supplier of designated vehicle agents, such as prices, quantity and cycles of goods supply. • Establish contingency measures to cope with special incidents such as late supply and variation in quality. • Introduce innovated auto accessories according to the consuming pattern of local market and world-wide trend. • Establish the performance indicators for the purchasing strategy, such as the storage period of goods and costs. • Review the effectiveness of purchase and revise the strategy.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating effective purchasing strategy according to the characteristics of auto parts and accessories, market situation, the conditions of the suppliers and the resources of the organisation; and • Capable of reviewing and adjusting the strategy according to the performance indicators of the purchasing strategy.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Design the storage zone for parts and accessories
Code	108631L5
Range	This unit of competency is applicable to the practitioners in the warehouse management department. They should be capable of designing highly effective and flexible storage zones in accordance with the requirements of the storage zone and the characteristics of stock.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories, and the storage methods) • Master the characteristics of auto parts and accessories and the requirements of storage and delivery, such as temperature and humidity control. • Good understanding of the characteristics and functions of different kinds of storage devices, such as open type, closed type and loading. • Master the requirements of the overall layout of the warehouse (e.g. the storage and retrieval locations). • Good understanding of the characteristics of the tools for storage and retrieval of goods. • Master the requirements on circulation of goods and inventory level. 2. Performance (Design the storage zone for parts and accessories) • Devise the storage zones for the parts and accessories (including dangerous goods) according to the warehouse management strategy, overall layout of warehouse, characteristics of goods as well as the requirements on circulation and inventory level, such as: ◦ The types (open or closed) and dimensions of the storage bins or racks for parts and accessories ◦ Quantity of different types of storage bins and racks, and the arrangement of locations ◦ Gangways for the effective goods storage, retrieval and delivery processes, such as: ▪ quick circulation items should be placed close to the storage and retrieval points ▪ the size and circulation frequency of goods should be considered, apart from sorting by categories ▪ effective space utilisation ▪ convenient for stock taking ▪ flexibility for change of design • Draw up contingency measures to cope with temporary changes in the requirements on the storage of parts and accessories. • Establish performance indicators for the storage and logistics of goods, such as the time taken for goods storage and retrieval, storage capacity. • Review the effectiveness of the storage and logistics operation and improve the design.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner shall prove that he/she is:

	• Capable of designing highly effective and flexible storage zones in accordance with the warehouse management strategy and the characteristics of the inventory goods; and • Capable of improving the design of the storage zone in accordance with the performance indicators of the storage and logistics operation.
Remark	

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Unit of Competency

Functional Area - Vehicle Servicing

Title	Contact vehicle manufacturers and overseas organisations for business and technical exchange
Code	108752L5
Range	This unit of competency is applicable in vehicle service/servicing centres. Practitioners should be able to reflect problems of customers' vehicles to vehicle manufacturers, sharing and exchanging technical knowledge with them; coordinating with servicing and technical staff to arrange appropriate training included technical training for them.
Level	5
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle manufacturer contacts, and overseas organisations for business and technical exchange) • Good understanding of the inter-relationship and communication channels between vehicle manufacturers and service/servicing centres. • Master the warranty coverage, terms and policy of protection set by the vehicle manufacturers for their vehicles. • Master the causes for vehicle faults/ damages and analyse respective repair reports. • Good understanding of the trend of new vehicle design and the direction of technical development. 2. Performance (Contact vehicle manufacturers and overseas organisations for business and technical exchange) • Maintain close relationship and communication with vehicle manufacturers and respective organisations/departments to exchange the business and technical problems; have timely discussions on urgent matters, such as recovery of vehicles, technical problems that cannot be solved by distributors and the impact of new regulations. • Assess reports of individual vehicle faults/damages and decide whether the cases should be forwarded to the vehicle manufacturers or respective organisations/departments for follow-up actions. • Arrange relevant training according to the technical report and training elements provided by vehicle manufacturers and respective organisations/departments. • Arrange respective staff members to visit the manufacturers' factories and respective organisations/departments for business and technical exchange and training in accordance with the technical level of the service/servicing centres.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of maintaining close and effective contact with the manufacturers or respective organisations/departments and making timely communication in solving problems; and • Capable of arranging respective staff members to visit the manufacturers' factories and respective organisations/ departments for business and technical exchange and training according to the technical level and needs of the service/servicing centres.

Remark	The credit value of this competency unit assumes that the practitioner has possessed a certain understanding of the vehicle structure, the working principle and performance of each system.

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Unit of Competency

Functional Area - Vehicle Servicing

Title	Design the loading compartments of trucks
Code	108767L5
Range	This unit of competency is applicable to the builders of loading compartments of trucks or respective engineering staff. Practitioners should be able to master the specification requirements on the construction of loading compartments, preparing the design drawings on the basis of intact chassis of truck by means of appropriative drafting software, and listing the material required.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure of trucks) • Fully understand the overall structure and respective technical parameters of trucks (including chassis and cab), such as wheel base, wheel span, axle load, the dimension of cab, the shape and dimension of the frame. • Master the characteristics, application standard, joining methods and costs etc. of the construction materials for various kinds of loading compartments. • Master the construction process of the loading compartment, such as material shaping, construction and fixation of the skeleton, rust-proof, painting and installation of supplementary facilities. • Master requirements of customers on loading compartments, such as categories, sizes and weights of goods, interior environment of the loading compartment (including temperature, humidity, fire prevention, water-proof, vibration-proof, protection from electric shock and collision, etc.), security, loading and unloading locations of goods and appearance. • Master requirements of customers on the supplementary facilities inside and outside the loading compartment, such as the lifting tail gate, crane, dump truck and refrigerated truck. • Good understanding of legislative standards on truck body, such as lighting and warning lamps, reversing buzzer, dimension.

	2. Performance (Design the loading compartment) • Define the design objectives and technical specifications, and categorize the drawings for different sections by integrating the specification requirements of customers, legislative standards, chassis limitations and cost on the basis of intact chassis of truck. • Apply appropriative drafting software to prepare the design engineering drawings for the loading compartment according to the established design objectives while taking the possibility of supplementary facilities installation into account. • Compile the list of the materials required according to the design engineering drawing, and evaluate the man-hours required for construction, working procedures and costs to ensure that requirements of parties concerned are met. • Widely accept opinions from all concerned parties (such as builders, material suppliers and customers, etc.) and revise the design details when necessary without deviating from the design objectives. • Ensure that the design, appearance and safety standards of the loading compartment comply with respective legislative requirements.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering requirements of customers and respective regulations on loading compartments, and defining the design objectives and technical specifications based on an intact chassis of truck; and • Capable of applying appropriate drafting software to prepare the design engineering drawings for the loading compartment and compiling the list of required materials to ensure that the requirements on design objectives, technical specifications and costs are met.
Remark	The credit value of this competency unit assumes that the practitioner has possessed knowledge of the car body structure. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations

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Unit of Competency

Functional Area - Vehicle Servicing

Title	Design the carriages of passenger vehicles
Code	108768L5
Range	This unit of competency is applicable to the builders of the carriages of passenger vehicles or respective engineering staff. Practitioners should be able of master the specification requirements on the construction of carriages of passenger vehicles, preparing design drawings on the basis of intact chassis of passenger vehicles by means of appropriative drafting software, and listing the materials required.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure of passenger vehicles) • Fully understand the detailed overall structure of passenger vehicles and the inter-relationships of various systems (e.g. power, transmission, suspension, steering, braking, electric, heating, ventilation and air conditioning, vehicle frame and interior trim) and master the technical parameters of vehicles (e.g. wheel base, wheel span, axle load, the shape and dimensions of the frame). • Master with the construction process of carriage, such as material shaping, construction of the skeleton, panelling, rust-proof, painting, assembling, installation of supplementary facilities and inspection. • Master the characteristics, application standards, joining methods and costs, etc. of different construction materials for the carriage. • Fully master requirements of customers on carriages, such as vehicle load, the dimension and location of baggage compartment, interior environment of the carriage and facilities (including views, light filtration, sound-proof, heat-proof, heating, ventilation and air conditioning, audio-visual systems, reversing visual display, storage shelf and toilet, etc.), security, entrance/exit locations and emergency exit doors for passenger as well as appearance. • Good understanding of legislative requirements on the standard of the interior design of the carriages of passenger vehicles, such as the dimensions and location of entrance/exit (including stairs) and emergency exit doors for passengers, the dimension and anti-skidding requirements of passageway, the dimensions and legroom of seat, seat belts, the locations and the requirements on surface treatment of handrails, headroom and driving cabin. • Good understanding of the legislative requirements on the passenger vehicle body, such as mirror, lighting and warning lamp, dimension, emergency stop button, colour (applicable to public service vehicles only). • Good understanding of the legislative requirements on the passenger vehicle safety, such as load distribution, the ability to withstand turnover (restrictions on the height of the centre of gravity) and overall dimensions.

	2. Performance (Design the carriage) • Define the design objectives and technical specifications, and categorize the drawings for different sections by integrating the quality requirements of customers, legislative standards, chassis limitations and cost on the basis of intact chassis of passenger vehicle. • Apply appropriative drafting software to prepare the design engineering drawings for the carriage according to the established design objectives while taking the possibility and rationality of supplementary facilities installation into account. • Compile the list of the materials required according to the design engineering drawing, and evaluate the man-hours required for construction, working procedures and costs to ensure that requirements of parties concerned are met. • Widely accept opinions from all concerned parties (such as builders, material suppliers and customers, etc.) and revise the design details when necessary without deviating from the design objectives. • Ensure that the interior design, appearance and safety standards of the carriage of passenger vehicles comply with respective legislative requirements.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering requirements of customers and respective regulations on carriage, and defining the design objectives and technical specifications on the basis of intact chassis of passenger vehicle; and • Capable of applying appropriate drafting software to prepare the design engineering drawings for different sections of the carriage and compiling the list of required materials to ensure that the requirements on design objectives, technical specifications and costs are met.
Remark	The credit value of this competency unit assumes that the practitioner has possessed knowledge of the car body structure. The major legislation/rule involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Compile report on quality issues
Code	108774L5
Range	This unit of competency is applicable to the managerial staff performing quality management duty in sizable enterprises of the automotive industry. Practitioners should be able to perform quality management duties by analysing the data/information obtained from the monitoring points of quality management, the quality and problems of respective procedures so as to compile the report on quality issue.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Content of report on quality issues) • Master the detailed workflow regarding sales and after-sales services of each department in collaboration with the organisational quality management system. • Good understanding of the purpose, format and key points of respective reports. • Good understanding of in general the theory, statistics and their applications. 2. Performance (Compile report on quality issues) • Analyse various quality management audit reports and summarise the problems of various procedures and their causes such as insufficient monitoring, under-trained technicians, instruments and equipment problems, lack of technical information, weak communication and coordination; quantify the condition and the problems of quality management; analyse data or information and draw the conclusion. • Consolidate the quality issue and problems on procedures of sales and after-sales; report to the management level of the organisation in the form of reports.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the internal operation of the organisation and the details of the quality management system; analyzing the parameters of the monitoring points in each quality control audit report, quantifying them to make a summary; and • Capable of summarizing the quality and problems of various procedures in the organization, compiling an overall quality reports for submission to the management level.
Remark	

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Unit of Competency

Functional Area - Common Competency

Title	Conduct quality audit
Code	108775L5
Range	This unit of competency is applicable to the quality management staff in sizable enterprises of the automotive industry. Practitioners should be able to master the auditing techniques of quality management and conduct internal quality audit.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Quality management system for the automotive industry and auditing techniques) • Master the departmental workflow for the sales and after-sales of vehicles and the requirements on quality management. • Master the auditing techniques of quality management. • Good understanding of the areas and issues of the automotive industry that must pay special attention to in quality management, such as the proportion of human factors and the uniqueness of individual pre-sales and after-sales services. • Good understanding of how the organisational quality management system can be implemented in daily operation. • Good understanding of the theory, statistics and application of general quality inspection.

	2. Performance (Conduct internal quality audit)
	• Formulate internal auditing plans, including:
	  ◦ Identify the primary responsibility and work of the audited department
	  ◦ Analyse the major working procedures and division of work in the department
	  ◦ Determine the control method and procedures of the work flow, including the quality monitoring points, and formulate the quality control table
	  ◦ Ensure smooth operation of the systems of working procedures, working instructions and document control, and provide the necessary training
	• Conduct quality audit
	  ◦ Compile auditing procedures
	  ◦ Compile the time-table for interviews with staff
	  ◦ Conduct departmental auditing exercise in accordance with the auditing plan, ensure that the various quality control tables are adequately completed
	  ◦ Identify if the operation of departmental systems can meet the requirements of the quality management system with reference to relevant records and documents, current practice, audited working procedures and interviews with staffs
	  ◦ Follow up and handle non-compliance items, the procedures include
	  ▪ identify the discrepancy between the non-compliance items and the required standard, the range of the non-compliance items and the possible consequences
	  ▪ make suggestions for improvements
	  ▪ trace and follow up the improvement measures for rectifying non-compliance items
	• Compile audit reports according to the observations made during the auditing process.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating a systematic and efficient quality audit plan for the vehicle sales and after-sales departments; • Capable of effectively conducting internal quality audit; and • Capable of effectively tracing and following up on the non-compliance items.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Design quality management courses
Code	108776L5
Range	This unit of competency is applicable to staff of providing training on quality management in sizable enterprises of the automotive industry. Practitioners should be able to focus on the common weaknesses in quality management, designing and delivering quality management courses and training programmes to enhance staff awareness on quality management through staff training.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Concept and culture of quality management) • Good understanding of organisational quality management system and the internal operation of the sales and after-sales services to an extent that the level of familiarity must be mastered in the overall perspective of quality management system in the organisation. • Good understanding of the concept and culture of quality management such as the quality cycle of "plan – do - check - act". • Good understanding of general quality control theory, design and applications. 2. Performance (Design and deliver quality management courses and training programmes) • Define the objectives for quality management courses. For example, focus can be given on typical weaknesses in quality management on vehicle sales and after-sales services. Design basic quality management courses and training programmes such as the basic quality management for each working procedure, including inspection, maintenance, tuning, evaluation. • Design basic courses on quality management cycle of "Plan-do-check-act" for individual sales and after-sales department. • Regularly review the quality management courses and suggest for improvement and update when necessary.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of designing basic quality management courses and training programmes with a focus on the weaknesses in quality management for the sales and after-sales services of the organisation; and • Capable of reviewing the effectiveness of the quality management programmes, making suggestions for improvement and updating programmes when necessary.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Implement the ISO quality management standard
Code	108777L5
Range	This unit of competency is applicable to the quality management staff of the organisation in the automotive industry adopting the ISO quality management standard. Practitioners should be able to implement the ISO quality management standard in familiar workplaces.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (ISO quality management standard) • Master the overall operation of vehicle sales and after-sales services of the organisation. • Master the content and the knowhow of implementation in the organisation of the latest ISO9001 standards quality management and quality assurance series. 2. Performance (Implement the ISO quality management standard) • Implement the standards of ISO9001 quality management and quality assurance series, including: ◦ The quality management duty of all levels of staff ◦ Quality assurance system ◦ Document and information management mechanism ◦ Purchase management mechanism ◦ Working procedure auditing mechanism ◦ The control and rectifying system for sub-standard items or product ◦ Quality record control system ◦ Internal quality management auditing system • Communicate and coordinate with the heads of various departments to promote the integration of ISO9001 quality management system requirements in the organization. • Explain to the employees at all levels the document structure of the ISO9001 quality control system, including the quality manual, procedure documents and work specifications.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of fully understanding the details of the ISO9001 quality management series and respective document procedure as well as the overall operation of the sales and after-sales services of the organization, understanding how the two may integrate, and explaining how to operate to all levels of staff; • Capable of implementing the technical requirements of the ISO9001 quality management series; and • Capable of coordinating with department heads to implement the ISO9001 quality management series in sales and after-sales services.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Implement the quality management standard specified by the vehicle manufacturer
Code	108778L5
Range	This unit of competency is applicable to the internal quality management staff of the franchised agents for vehicle manufacturers. Practitioners should be able to fully understand the quality management standard specified by the vehicle manufacturer and implementing such standard in familiar workplaces.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Quality management standard specified by the vehicle manufacturer) • Master the quality management system specified by the vehicle manufacturer. • Master the overall operation mechanism of the sales and after-sales services of the brand agent as well as the responsibilities of all parties concerned. 2. Performance (Implement the specified quality management standard) • Communicate with the quality management representatives of the vehicle manufacturer to understand the specified requirements. • Liaise with the department heads of sales and after-sales services to facilitate the implementation of the specified quality management. • Implement the quality management system specified by the vehicle manufacturer, such as: ◦ Document and information management mechanism ◦ Workplace equipment and specification management mechanism ◦ Technical staff ranking management mechanism ◦ Workflow and auditing mechanism ◦ Purchase management mechanism ◦ The control and rectifying systems for sub-standard items or products ◦ Quality assurance system ◦ Quality record management system
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of fully understanding the quality management standard specified by the vehicle manufacturer, the operating system and the responsibility of the agent; and • Capable of implementing the quality management system specified by the vehicle manufacturer in one's organisation.
Remark	

Specification of Competency Standards
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Functional Area - Common Competency

Title	Implement quality management training courses
Code	108779L5
Range	This unit of competency is applicable to the quality management training staff in sizable enterprises of the automotive industry. Practitioners should be able to master the knowledge and techniques of quality management and implementing quality management training courses.
Level	5
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	1. Knowledge (Quality management system)
	• Master the detailed operation of the vehicle sales and after-sales services of the organisation.
	• Master the quality management system adopted by the organisation and the implementation details, such as:
	  ◦ ISO 9001
	  ◦ The quality management standard specified by the vehicle manufacturer
	  ◦ Total Quality Management System
	  ◦ Quality Circle
	  ◦ Business Process Re-engineering
	• Understand the objectives and content of the established quality management courses.

	2. Performance (Implement quality management training courses)
	• Implement basic quality management courses or training programmes to enhance staff awareness on quality management, such as:
	  ◦ The basic requirements and range of application for the ISO 9001 quality management standard and quality assurance series
	  ◦ The structure of the quality management system specified by the vehicle manufacturer
	  ◦ How to implement the broad sense of quality management concept in the organisation
	  ◦ The effectiveness of the reviewing and improvement procedures in the quality management setup
	• Select the teaching methods of quality management courses, such as:
	  ◦ Lecturing
	  ◦ Interaction
	  ◦ Topical study
	  ◦ Evaluation
	• Explain clearly to students the course content, such as the main systems in the quality management setup:
	  ◦ Working procedures system
	  ◦ Working instruction system
	  ◦ Document control system
	• Review the effectiveness of completed quality management courses:
	  ◦ Collect the opinion of the learners on the courses using questionnaires
	  ◦ Evaluate the progress of the participants with respective department heads after receiving the training courses

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of grasp the detailed operation of the vehicle sales and after-sales services and its implementation in the quality management setup; • Capable of grasp the objectives and content of the established quality management courses; selecting teaching methods and explaining clearly to learners the course content; and • Capable of reviewing the effectiveness of completed quality management courses.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Formulate plans to enhance staff awareness on quality management
Code	108780L5
Range	This unit of competency is applicable to the managerial level responsible for quality management in sizable organisations of the automotive industry. Practitioners should be able to analyse where employees need to be strengthened in quality control, and formulating plans to enhance staff awareness on quality management.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Quality management system and its objectives) • Master quality management theory. • Master organisational quality. management system and its objectives. • Master the implementation of quality management system in the daily operation of vehicle sales and after-sales services. 2. Performance (Formulate plans to enhance staff awareness on quality management and review the effectiveness) • Analyse staff opinion on quality management system. • Identify the discrepancy between organisational objectives and staff performance in quality management; and explain to staff the relation between performance indicators and various working procedures. • Analyse organisational quality management culture and devise methods to enhance staff awareness on quality management with emphasis on their weaknesses, such as organise training courses, implement reward mechanism, quiz, seminars, quality circles. • Select appropriate plans to enhance staff awareness on quality management and its content should include objectives, implementation method, expected results, financial budget, methods to measure effectiveness. • Evaluate and review the effectiveness of the plans upon implementation.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of analyzing the organisational objectives of quality management and its implementation in daily operation; • Capable of explaining to staff the relation between quality indicators and various working procedures as well as the discrepancy between staff performance and its objectives; and • Capable of drafting proposals on enhancement of staff awareness of quality management; evaluating and reviewing their effectiveness upon implementation.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Establish equipment management system
Code	108791L5
Range	This unit of competency is applicable to sizable vehicle servicing workshops, parts warehouses. Practitioners should be able to understand the operation of various workplaces, the characteristics and potential risk of individual equipment. They should establish appropriate management system according to the actual situation of the organisation to provide reliable equipment for the workplaces.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Equipment provided in the workplaces) • Good understanding of the equipment provided in the workplaces and their functions, and identify those governed by the regulations listed out in the column “Remarks” below; and understand the respective provisions of the ordinances. • Good understanding of the potential risks of individual equipment (e.g. load-carrying facilities, lifting equipment). • Good understanding of the equipment that are critical or irreplaceable.

	2. Performance (Formulate equipment management plan for the workplaces)
	• Capable of listing out the equipment in different workplaces such as testing instruments, vehicle lifting equipment, specialised computer and software for inspection and maintenance purposes, special tools.
	• Capable of formulating equipment management plan for the workplace according to actual organisational needs and the established list of equipment while taking into account the factors of significance, complexity, servicing time required, stability, replacement alternative for example:
	  ◦ Budgeting for maintenance
	  ◦ Arranging for testing and commissioning
	  ◦ Define access authority
	  ◦ Plan for cleaning, maintenance and routine inspection procedure
	  ◦ Select maintenance scheme
	  ◦ Plan for training in operation and maintenance
	  ◦ Monitor maintenance record
	  ◦ Audit the obsolete equipment reports
	  ◦ Define system for the purchase, storage, utilisation/replacement, obsoleteness for consumables
	• Whenever necessary, conduct detail analysis on critical and complicated equipment by retrieving major parameters such as utilisation rate, mean down-time, consumable expenditure, maintenance expenditure, servicing time required; monitor and suggest improvement proposals to enhance stability.
	• Conduct risk assessment for specialised computer system for inspection and maintenance purposes so as to formulate contingency plan; for example, prepare data back-up, operate without computer.
	• Establish management procedure to ensure that the equipment (e.g. jacks and vehicle lifting equipment) abided by regulations confirm with statutory requirements.
	• Establish environmental protection practice to achieve the results of energy saving, waste minimisation.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of grasp the specific functions, significance, stability and potential risks of the equipment in different workplaces; • Capable of formulating an appropriate equipment management plan with regard to actual organisational situation, such as the expenditure on maintenance, cleaning and inspection, access authority, servicing, consumables; • Capable of conducting detail analysis on complicated or critical equipment to enhance the stability when necessary; and • Capable of ensuring the operation of the equipment complying with respective statutory requirements.
Remark	The respective legislations/rules involved in this unit of competency are as follows: • Factories and Industrial Undertakings (Spraying of flammable liquids) Regulations • Factories and Industrial Undertakings (Dangerous Substances) Regulations • Dangerous Goods Ordinance • Gas Safety Ordinance • Factories and Industrial Undertakings (Lifting appliances and Lifting Gear) Regulations • Factories and Industrial Undertakings (Asbestos) Regulations • Occupational Safety and Health Ordinance • Code of Practice on Control of Air Impurities (Chemical Substances) in the Workplace

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Functional Area - Common Competency

Title	Formulate customer services plan
Code	108797L5
Range	This unit of competency is applicable in workplaces providing vehicle sales and after-sales services. Practitioners should be able to formulate customer services plans to provide quality services to enhance organisational image and business.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Customer's requirements on the services provided by the automotive industry) • Master the industry's criteria and requirements of high-quality customer services. • Master the customer services indicators set by the vehicle manufacturers for the brands and products. • Good understanding of the objectives of comprehensive organisational strategy, the available resources of the organisation and the strengths and weaknesses of each department. • Master the expectation of the market and customers. • Good understanding of the policy on strengthening the customer services and trend for future standard of services. • Master changes in the automotive industry and market environment.

	2. Performance (Formulate customer services plan)
	• Formulate customer services plan for the automotive industry.
	• With reference to the vehicle manufacturer's requirements and instructions in this regard and considering the special conditions of the organisation and local market:
	  ○ Devise services operation system
	  ▪ system blueprint and structure
	  ▪ key service staff scheme
	  ▪ support of organisational resources
	  ○ Understand the daily operation of the organisation, such as:
	  ▪ rules of customer services and discipline of staff
	  ▪ duties of customer services
	  ▪ design the workflow, operation and steps of standard services
	  ▪ services and facility management, such as allocation of equipment, installation, maintenance and operation training
	  ▪ service environment management
	  ○ Positioning of customer services and identify target customers
	  ○ Establish improvement mechanism for customer services
	  ○ Establish appraisal system on customer services and commend those staff with good performance
	  ○ Formulate electronic customer services plan for the organisation, such as:
	  ▪ set up data base in the website of the organisation
	  ▪ handle electronic enquiry
	  ▪ provide electronic customer services
	  ○ Understand changes in the market and customer needs, conduct regular reviews and adjust customer services plan
	  ○ Assess operation efficiency and communicate with respective departments that have contacts with customers
	  ○ Submit relevant reports to seniors and the vehicle manufacturer

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating customer services plan and monitoring the operation to strengthen and enhance business of the organisation; and • Capable of understanding changes in the automotive industry, adjusting customer services plan and maintaining close interaction with different partners.
Remark	

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Establish environmental protection management system
Code	108810L5
Range	This unit of competency is applicable to the managerial staff of operating workplaces in the automotive industry. Practitioners should be able to understand regulations of environmental protection relevant to the workplaces and possess good environmental management concept to establish a feasible environmental protection management system for the workplaces under their supervision.
Level	5
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Regulations of environmental protection and respective operation of the workplaces)
	• Understand the responsibilities of employers and employees stipulated in the following ordinances:
	  ◦ Related issues stipulated in the Noise Control Ordinance
	  ◦ Related issues stipulated in the Waste Disposal Ordinance
	  ◦ Related issues stipulated in the Water Pollution Control Ordinance
	  ◦ Related issues stipulated in the Ozone Layer Protection Ordinance
	  ◦ Related issues stipulated in the Dumping at Sea Ordinance
	  ◦ Related issues stipulated in the Air Pollution Control Ordinance
	  ◦ Related labour regulations
	• Understand the operation and human resources supply of each department within the organisation.
	• Master the long-term and short-term objectives established by the organisation for environmental protection as well as the performance indicators.
	• Understand the content of the risk assessment report.
	• Understand the concept of good environmental protection practice.

	2. Performance (Establish environmental protection management system)
	• Formulate evaluation procedure for performance indicators according to the requirements of comprehensive environmental protection policy, such as evaluation methods, choice of persons and frequency.
	• Formulate operational requirements and instructions on environmental protection applicable to various workplaces according to the analysis of the risk assessment report and comprehensive organisational policy; establish monitoring systems and compile records of documents; specific issues involved including:
	  ○ Chemical waste such as waste oil and organic solvent, etc.
	  ○ The utilisation and recycling of refrigerants
	  ○ Exhaust gas emission from workshops
	  ○ Recycle of fuels, filter units for lubricants, waste engine oil, waste paints or organic solvent and their empty containers
	  ○ Handle the cloth stained with paints, engine oil, organic solvent, etc.
	  ○ Recyclable parts, such as waste batteries, waste tyres and waste brake pads, etc.
	  ○ Asbestos waste
	  ○ Waste separation, recycle and disposal
	  ○ Workshop waste water
	  ○ Noise
	  ○ Air pollutant such as volatile organic chemical, dusts, awful smell
	• Formulate good environmental management rules applicable to individual workplace according to the comprehensive environmental protection policy of the organisation, such as:
	  ○ Indoor air quality
	  ○ Energy efficiency
	  ○ Environmental protection of consumables
	  ○ Green procurement
	• Establish respective staff training procedure according to human resources and actual operation of the organisation, such as resources arrangement, choice of persons to be trained and training proposals.
	• Establish verifying procedure for the details of environmental protection management according to the actual situation of the organisation so as to ensure the implementation of the environmental protection system.
	• Review and analyse the effectiveness of the environmental protection system and revise it when necessary.
	• Review the established measures or instructions and confirm the compliance with respective statutory requirements on environmental protection.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of establishing an environmental protection management system applicable to workplaces under their supervision according to comprehensive organisational policy as well as monitoring its operation; and • Capable of reviewing and optimizing the system.
Remark	The major legislations involved in this unit of competency are as follows: • Noise Control Ordinance • Waste Disposal Ordinance • Water Pollution Control Ordinance • Ozone Layer Protection Ordinance • Air Pollution Control Ordinance • Occupational safety and health Ordinance

Specification of Competency Standards
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Unit of Competency

Functional Area - Common Competency

Title	Establish management system for servicing workshops
Code	111661L5
Range	This unit of competency is applicable to service workshops (e.g., vehicle body service workshops, general mechanical workshops, service pits, LPG vehicle service workshops, painting workshops, and electrified vehicle workshops). Practitioners should be able to understand the operation of different vehicle servicing works and formulate appropriate management plans for the workshop regarding the actual organisational situation to ensure the servicing workshop is under effective and safe operation and in compliance with statutory requirements.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operation of various kinds of servicing workshops) • Master the daily operation, specific functions and potential risks of various service workshops. • Good understanding of the provisions of respective regulations applicable to service workshops such as fire services, industrial undertakings, occupational safety and health, environmental protection, and labour. 2. Performance (Establish management systems and plans for service workshops) • List out the appropriate environmental requirements for different kinds and sizes of vehicle service workshops, such as lighting, ventilation and air-conditioning, sound-proofing, fire prevention, electricity supply, floor loading capacity, exhaust and combustible gas detection and extraction, floor height clearance, drainage provisions, alarming apparatus, information network. • Based on the established environmental requirement with reference to the scale of the organisation, formulate the appropriate management system for the workshop, such as inspection frequency, testing methods, deployment of inspection staff, cleaning, service and maintenance plans, maintenance budget, etc., and compile regular inspection tables for various service workshops. • Define the workshop setup for every workshop to ensure smooth traffic flow, work safety, environmental protection operation and maximum productivity. • Establish daily maintenance procedure regarding the operation of individual workshops and arrange appropriate resources to meet operational needs. • Establish management procedures for servicing workshops, such as entry and exit, utilisation, security measures, etc., so as to ensure that the equipment in the workshops confirms with the respective statutory regulations of security, fire services, factories and industrial undertakings, environmental protection, and labour. • Establish environmental protection practice on domestic water consumption, electricity, fuels so as to achieve the results of energy saving and waste minimisation.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of grasping the specific requirements, environmental standards and the facilities requirements in various kinds of vehicle service workshops; • Capable of formulating appropriate management methods for the workshops concerning actual organisational situations to optimise the planning and setting of the workshop; establishing procedures for daily maintenance, entry and exit, utilisation and security to provide a safe and good working place; and • Capable of maintaining the operation of the servicing workshops in compliance with respective statutory requirements.
Remark	The respective legislations/rules involved in this unit of competency are as follows: • Factories and Industrial Undertakings (Spraying of flammable liquids) Regulations • Factories and Industrial Undertakings (Dangerous Substances) Regulations • Dangerous Goods Ordinance • Gas Safety Ordinance • Factories and Industrial Undertakings (Lifting appliances and Lifting Gear) Regulations • Factories and Industrial Undertakings (Asbestos) Regulations • Occupational Safety and Health Ordinance • Code of Practice on Control of Air Impurities (Chemical Substances) in the Workplace • Factories and Industrial Undertakings Ordinance • Code of Practice – Safety and Health at Work for Gas Welding and Flame Cutting Work • Code of Practice – Safety and Health at Work for Manual Electric Arc Welding • Electricity Ordinance • (This UoC replaced 108792L5)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Establish occupational safety and health management system
Code	111662L5
Range	This unit of competency is applicable to the managerial staff of operating workplaces in the automotive industry. Practitioners should be able to understand the respective regulations of occupational safety and health to establish an occupational safety and health management system for familiar workplaces under their supervision.
Level	5
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Regulations of occupational safety and health as well as the respective operation of workplaces)
	• Fully understand the responsibilities of employers and employees stipulated in the following ordinances, such as:
	  ○ Occupational Safety and Health Ordinance
	  ○ Factories and Industrial Undertakings Ordinance as well as its related regulations
	  ○ Related issues stipulated in the Fire Services Ordinance
	  ○ Issues relating to liquefied petroleum gas (LPG) and hydrogen-fuelled vehicles stipulated in the Gas Safety Ordinance
	  ○ Related issues stipulated in the Dangerous Goods Ordinance
	  ○ Respective labour regulations
	  ○ Electricity Ordinance
	• Good understanding of the operation and human resources supply of each department within the organisation.
	• Master the long-term and short-term objectives established by the organisation for occupational safety and health as well as the performance indicators.
	• Good understanding of the content of the risk assessment report.

	2. Performance (Establish occupational safety and health management system) • Formulate evaluation procedures for performance indicators according to the policy requirements of occupational safety and health, such as evaluation methods, choice of persons and frequency, and compile regular inspection tables for occupational safety and health. • Formulate working instructions on occupational safety and health management according to the analysis of the risk assessment report and comprehensive policy, such as the authority to use equipment and specific tasks, the instructions on safe operation of complicated equipment; establish monitoring systems, devise reporting mechanisms for incidents, and compile records of documents. • Establish respective staff training procedures according to the human resources supply and actual operation of the organisation, such as resource arrangement, choice of persons to be trained and training proposals. • Review and analyse the effectiveness of the occupational safety and health management system and revise it when necessary. • Establish emergency and contingency measures to ensure smooth operation or minimise loss. • Review the established measures and confirm the compliance with statutory requirements.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of establishing a management system on occupational safety and health applicable to workplaces under their supervision according to comprehensive organisational policy and monitoring its operation; and • Capable of reviewing and optimizing the occupational safety and health management system.
Remark	The respective legislations involved in this unit of competency are as follows: • Occupational Safety and Health Ordinance • Factories and Industrial Undertakings Ordinance • Fire Services Ordinance • Gas Safety Ordinance • Dangerous Goods Ordinance • Waste Disposal Ordinance • Electricity Ordinance • (This UoC replaced 108809L5)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Diagnose, test and repair vehicle high-voltage batteries
Code	111767L5
Range	This unit of competency is applicable in vehicle battery service workshops. Practitioners should be able to work on the battery system and the related high-voltage components in electrified vehicles, including fuel cell electric, electric and hybrid electric vehicles; diagnose, test and repair the high-voltage batteries, and replace modules safely according to the instructions in the vehicle manufacturer's service manual, occupational and health and environmental protection legislation. They should also be able to conduct performance tests on the high-voltage batteries and provide written report upon completion of work.
Level	5
Credit	4 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Common faults of the vehicle high-voltage batteries, diagnostic procedures and equipment)
	• Master the causes of common faults of the vehicle high-voltage batteries on:
	  ○ Overheating
	  ○ Deformation after crash
	  ○ Fluid leakage
	  ○ Smoking
	  ○ Soaked
	  ○ Electricity leakage
	• Master the fault diagnostic process for vehicle high-voltage batteries with reference to the instructions in the manufacturer's service manual, such as:
	  ○ Pressure Test (IP test)
	  ○ Isolation / non-conductive test
	  ○ Cell/module balance test
	• Master the use of special service tools, personal protection and first-aid equipment for relevant servicing tasks of high-voltage battery, such as insulation testers, gloves, rescue hooks, etc.
	• Masterly manage the temporary storage of disposed cells/batteries, disposal and recovery procedures for batteries according to the requirements of environmental protection regulations.
	• Understand relevant legal requirements on road traffic and safety and environment protection.

	2. Performance (Conduct diagnosis and rectify the faults of the vehicle high-voltage batteries)
	• Accurately conduct complicated fault diagnosis on the high-voltage batteries of electrified vehicles according to the instructions in the manufacturer's service manual and the requirements concerning occupational health and safety and that of environmental protection, including the use of special equipment and instruments to assist the diagnostic process.
	• According to the diagnostic result, process the rectification / module replacement work.
	• Conduct pressure test for the high-voltage battery housing the sealing process
	• Conduct functional tests and cell/module balancing.
	• Conduct performance and safety inspection after the work, and provide written report, focusing on:
	  ◦ Abnormalities
	  ◦ Measurement data
	  ◦ Major decisions and the effectiveness
	• Correctly handle the temporary storage, disposal and recovery of cells/batteries according to the requirements of environmental protection regulations.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of conducting complicated fault diagnosis on vehicle high-voltage batteries, including circuit breakers and associated controls, according to the instructions in the manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations; • Capable of conducting or arranging rectification, including cell balancing, according to diagnostic results; • Capable of sealing the battery box after repair work and conducting pressure test according to the instructions in the manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations; • Capable of managing the storage, disposal and recovery of various types of cells/batteries correctly with compliance to the requirements of environmental protection regulations; and • Capable of conducting functional tests and completing fault report, and providing working report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed the intensive knowledge of the vehicle high-voltage batteries and the competency recognition proof issued by the regulatory authority concerned, or equivalent.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Optimise the performance of the power systems on electrified vehicles
Code	111768L5
Range	This unit of competency is applicable to the engineering staff in the vehicle service and technical departments. Practitioners should be able to master the structure, control methods and operating principles of the power systems of electrified vehicles, including fuel cell electric, battery electric and hybrid electric vehicles, and optimise the system efficiency with reference to the manufacturer's service updates and respective instructions.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Electrified vehicle system performance and related technology) • Master the structure, functions, control methods, operating principles and standard parameters (e.g., manufacturer standard, approved international standard, and respective regulations) of various electrified vehicle systems and associated components. • Master vehicle performance tuning and testing equipment application techniques. • Master the control system update techniques for the vehicle system performance optimisation with reference to the manufacturer's service updates and respective instructions. 2. Performance (Optimise the performance of electrified vehicle systems) • Research and make improvements to the degraded electrified vehicle systems according to the released recommendations and respective instructions on the electrified vehicle system performance optimisation, such as: ◦ Electrical energy control and modulation, including but not limited to battery charging control, inverter and converter ◦ Power output and regeneration efficiencies of traction motor ◦ Traction battery efficiency and the state of health ◦ Thermal management systems for fuel cell unit, traction battery, and electronic control modules ◦ Abnormal degradation of traction battery energy capacity and fuel cell output ◦ Abnormal operating noise of the system components, including but not limited to air and water pumps, humidifier, traction motors and control electronics ◦ Power output and transient response of fuel cell system, as well as the hydrogen consumption rate (fuel cell electric vehicle specific) ◦ Degraded engine efficiency of hybrid electric vehicles, including power deficiency, rough running, acceleration hesitation, noisy operation and high fuel consumption rate (hybrid electric vehicle specific) ◦ Effectiveness of operation mode switching of hybrid electric vehicles (hybrid electric vehicle specific) • Review the effectiveness of performance optimisation of the electrified vehicle systems, compile report with improvement suggestions and submit to senior.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, control methods, operating principles and standard parameters of various electrified vehicle systems; • Capable of researching and improving the performance of degraded electrified vehicle systems with reference to the manufacturer's service updates and respective instructions; and • Capable of submitting report with work improvement methods with reference to the effectiveness review of the electrified vehicle system optimisation.
Remark	The credit value of this competency unit assumes that the practitioner has possessed a proficient understanding of the electrified vehicle structure, the working principle and performance of each system of various vehicle types. The practitioner concerned should be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – high voltage training course, or equivalent; be a competent person in hydrogen fuel cell electric vehicles recognised by the authority concerned (fuel cell system specific). The major ordinance involved in this unit of competency is as follows: • Road Traffic (Construction and Maintenance of vehicles) Ordinance • Gas Safety Ordinance • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Optimise the performance of vehicle systems
Code	111769L5
Range	This unit of competency is applicable to the engineering staff in the vehicle service and inspection departments. Practitioners should be able to master the structure, control methods and operating principles of various vehicle systems and optimise the performance of vehicles according to the suggestions and respective instructions.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Vehicle systems performance and related technology) • Master the structure, functions, control methods, operating principles and standard parameters (e.g., manufacturer standard, approved international standard, and respective regulations) of various vehicle systems (including related components). • Master vehicle performance tuning and testing equipment application techniques. • Master the suggestions and respective instructions on vehicle systems performance optimisation.

	2. Performance (Optimise the performance of vehicle systems)
	• Research and make improvements to the weaker performance systems according to the established suggestions and respective instructions on vehicle performance optimisation, such as:
	  ◦ Poor performance of the chassis stability control system, e.g., insufficient braking power, wheels locked when braking, abnormal noises, drifting or excessive vehicle body rolling when cornering, skidding when accelerating, weak impact and vibration absorption
	  ◦ Inaccurate or low response function of the advanced driver-assistance system
	  ◦ The vehicle body cannot be able to maintain the non-overturning condition at a specified inclined angle, unbalanced axle loading and low steering stability
	  ◦ Incorrect lighting intensity and aim alignment, overspread of light scattering and aim direction failed to follow the change of steering angle
	  ◦ Insufficient engine power, rough running, hesitation to accelerate, warm stalling, cold start difficulty, abnormal noise and high fuel consumption
	  ◦ Weak performance of electrified vehicles, such as insufficient power, weak acceleration, abnormal noise, and substandard energy consumption, including electricity or hydrogen for a given driving cycle
	  ◦ Emission problems caused by substandard pollutant emission levels, including high concentrations at idle, high-speed and high-load running, weak power system performance and low after-treatment device efficiency
	  ◦ Excessive working noise caused by the muffling effect of the exhaust system, the vehicle body shape and sound-proofing effect, component structure or installation problems
	  ◦ Weak acceleration, excessive fuel consumption and shifting shock, etc., caused by incorrect shifting speed or working pressure of automatic transmission
	• Review the effectiveness of performance optimisation of the weaker performance vehicle systems, compile report and submit to seniors for improvement suggestions.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the structure, control methods, operating principles and standard parameters of various vehicle systems; • Capable of researching and improving the vehicle systems of weaker performance according to the suggestions and respective instructions on performance optimisation; and • Capable of suggesting methods for improvement of work according to the effectiveness of vehicle system optimisation, and compiling a report.
Remark	The credit value of this competency unit assumes that the practitioner has possessed a proficient understanding of the vehicle structure, the working principle and the performance of each system of various vehicle types. (This UoC replaced 108744L5)

Specification of Competency Standards
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Unit of Competency

Functional Area - Vehicle Servicing

Title	Set up and maintain vehicle service workshops for various vehicle types
Code	111770L5
Range	This unit of competency is applicable to vehicle service workshops for various vehicle types, including but not limited to all electrified vehicles, liquefied petroleum gas (LPG) vehicles, diesel and gasoline vehicles. Practitioners should be able to understand the operation of various vehicle servicing work, design the workplaces and associated setups, and formulate management procedures for the workshop regarding the actual organisational situation to ensure the service workshop is under effective and safe operation and in compliance with statutory requirements.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operation of various kinds of servicing workshops and associated regulations) • Master the daily operation, potential risks, specific functions and equipment setup of various servicing workshops. • Comprehend the provisions of respective regulations applicable to servicing workshops, such as fire services, industrial undertakings, occupational safety and health, environmental protection, gas safety, etc. 2. Performance (Develop and manage the vehicle service workshops) • Apply the gas safety, environmental, occupational safety and health requirements under the legislative requirements for different kinds and sizes of vehicle servicing workshops, such as lighting, mechanical ventilation (especially for LPG and hydrogen-fuelled vehicles), noise control, limited or non-combustible wall and door surfaces (especially for LPG and hydrogen fuelled vehicles), fire prevention and alarming, electricity supply, floor loading capacity and height clearance, drainage provisions, combustible/exhaust gas extraction, etc. • Define the workshop setup for the specific workshop to ensure smooth traffic flow, work safety, environmental protection operation and maximum productivity. • Develop different kinds of vehicle service workshops and associated equipment setup, such as automated external defibrillators, combustible gas detection and alarming, etc., in accordance with the legislation and requirements in fire services, industrial undertakings, occupational safety and health, environmental protection, gas safety, etc., for meeting emergency and specific service operational needs, such as work bay areas, walkways, traffic lanes, access control, entry and exit, etc. • Based on the established requirements with reference to the attributes of the organisation, formulate the management procedures with associate documentations for specific workshops, such as inspection frequency, acceptance standard, maintenance plan for ensuring the setup and equipment meet the respective statutory regulations, utilisation, safety, the resources for meeting operational needs, etc.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of applying the specific requirements in gas safety, occupational safety and health, environmental standards and the facilities requirements in various kinds of vehicle service workshops for the establishment of workplace development, equipment setup, fire service equipment, emergency rescue and evacuation; and • Capable of formulating management procedures, including emergency response plans, incident reporting and investigation, record systems, and maintenance and service plans for the workshop regarding the actual organisational situation and operational needs to optimise the planning and setting of the workshop for ensuring effective and safe operation and in compliance with statutory requirements.
Remark	The credit value of this unit of competency is established on the presumption that the practitioner being assessed possesses a good understanding of the vehicle servicing work, workshop design, setup and management and is familiar with relevant requirements on environmental protection, gas safety, and occupational safety and health. The respective legislations/rules involved in this unit of competency are as follows: • Dangerous Goods Ordinance • Gas Safety Ordinance • Occupational Safety and Health Ordinance and related Code of Practice • Environmental Protection Ordinance and related Code of Practice • Factories and Industrial Undertakings Ordinance

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for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Analyze the emission test results of spark ignition internal combustion engines
Code	111771L5
Range	This unit of competency is applicable to vehicle service and inspection workshops and test laboratories. Practitioners should be able to master the combustion theory of spark ignition internal combustion engines, the constituents of exhaust emissions and their relationships with engine operating conditions for determining the acceptance of emission quality in compliance with statutory requirements and identifying the faulty components of the system.
Level	5
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (combustion theory, natures of pollutants, emission-related engine components and the legislative requirements on exhaust emission control) • Explain the combustion theory of spark ignition internal combustion engines, their characteristics and effects on exhaust emissions. • Master the air induction and fuel metering control of spark ignition internal combustion engines and their effects on exhaust emission quality. • Master the operation, characteristics and effectiveness of various emission control components for spark ignition internal combustion engines, such as oxygen sensors, air-fuel ratio sensors (wide-band oxygen sensors), exhaust recirculating control, exhaust gas temperature and pressure sensors, lean oxides of nitrogen (NOx) catalysts, two-way and three-way catalytic converters, etc. • Master the oxygen concentration, lambda ratio and the pollutants generated during the normal or abnormal fuel oxidation process, and the relationship among them under various working and operating conditions of the engine. • Comprehend the legislative requirements on the exhaust emission standards of various exhaust pollutants set by the local authority concerned, such as the Environmental Protection Department, Transport Department, etc.

	2. Performance (exhaust emission data interpretation, faulty component identification) • Identify the correct application and maintenance of exhaust emission test equipment under defined measurement procedures. • Determine the acceptance of pollutant concentrations with respect to the pre-defined exhaust emission limits of the testing vehicle. • Interpret the exhaust emission test result and traces of pollutant concentrations, including lambda ratio (λ), concentrations of oxygen (O2), carbon monoxide (CO2), carbon dioxide (CO), hydrocarbon (HC) and oxides of nitrogen (NOx), resulting from standard emission test conditions, and draw a comprehensive conclusion of the analysis. • Identify the faulty/ageing engine and emission control components with reference to the conclusion of emission data analysis, and propose the rectification plan. • Review the exhaust emission quality after rectification for the conformity to respective emission standards, and formulate the maintenance plan for the systems concerned.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of deeply understanding the operation and combustion process of spark-ignition engines, their effects on exhaust emissions, and the legislative requirements on the emission limits of various pollutant concentrations; • Capable of justifying the acceptance of the exhaust emission level of testing vehicles in accordance with the respective legislative requirements; • Capable of interpreting the exhaust emission test data and traces of pollutant concentrations for determining the faulty/ageing engine and emission control components; and • Capable of compiling the test report covering the concluded emission test result, the faulty components leading to excessive emissions and the formulated maintenance plan for improving the system reliability.
Remark	The credit value of this competency unit assumes that the practitioner has already masterly possessed extensive knowledge of automotive engine combustion and emission control technology, the legislative requirements on exhaust emissions, and the operation of spark ignition engines and associated systems.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Execute the Environmental, Social and Governance (ESG) for Automotive Companies
Code	111781L5
Range	This unit of competency is applicable to the practitioners of the management level : Practitioners should be able to execute a comprehensive ESG strategy that integrates environmental sustainability, social responsibility, and robust governance practices into the company's core operations, ensuring compliance with regulatory requirements and alignment with industry best practices.
Level	5
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Performance Requirement 2. Knowledge (Understanding ESG Principles and the Automotive Context) • Have a comprehensive understanding of the statutory requirements, industry codes of practice, and international standards related to ESG, such as ISO 14001, and evolving regulations like the EU's Corporate Sustainability Reporting Directive (CSRD), and vehicle conformity regulations. • Understand the comprehensive operational strategy, market position, and corporate image the enterprise aims to establish. • Have a good understanding of the ESG frameworks, policies, and systems established by vehicle manufacturers and key suppliers, including sustainability requirements for the supply chain. • Understand the principles of sustainability best practice, including the philosophy of prevention, reuse, reduce, and recycle (the waste hierarchy) and methods to reduce resource consumption (water, electricity, fossil fuels, chemicals). • Understand the characteristics and potential environmental impact of products, equipment, and hazardous materials used in the automotive workplace (e.g., oils, solvents, paints, refrigerants, batteries). • Understand the content and implications of risk assessment reports related to ESG issues. • Understand the key elements of the social component of ESG, including employee welfare, health & safety (OHS), diversity and inclusion, and community engagement. • Understand the principles of corporate governance as applied to ESG, including ethical conduct, transparency, data integrity, and compliance.

	3. Performance (Executing the ESG Strategy) • Environmental Management (E): ◦ Implement and monitor environmental protection policies to ensure the enterprise meets statutory requirements, including the handling and disposal of chemical waste, waste oil, refrigerants, exhaust emissions, wastewater, and noise. ◦ Apply and monitor sustainability best practices, including waste segregation, recycling, and identifying opportunities to reduce resource consumption. ◦ Identify and prevent hazards to air quality, water systems, and land, including the correct use of spill kits and other safety equipment. ◦ Undertake green procurement by taking into full consideration the environmental characteristics of products and the environmental management standards of suppliers when discharging purchasing duties. • Social Responsibility (S): ◦ Assist with the management and monitoring of key social performance indicators such as employee health and safety, training and development, and diversity and inclusion. ◦ Support the administration of employee grievance mechanisms and ensure compliance with relevant labor standards. ◦ Contribute to stakeholder engagement activities, acting as a point of reference for ESG to drive positive change across departments. • Governance (G): ◦ Support the administration and maintenance of the company's ESG governance framework, ensuring alignment with customer and regulatory requirements. ◦ Lead and coordinate internal ESG data collection, validation, and reporting processes to ensure documentation accuracy and audit readiness. ◦ Monitor and report on compliance with environmental, safety, labor, and ethical regulations. This includes maintaining Environmental Management Systems (EMS) and preparing for third-party assessments and audits. ◦ Monitor and record environmental damage and breaches of regulations and report them through established procedures.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is Capable to develop an ESG analysis and plan. Conduct a current situation analysis of a real or fictitious automotive business unit, identifying the unit's key strengths, weaknesses, risks, and opportunities in the three areas of E, S, and G. Ability to set specific, measurable, achievable, relevant, and time-bound (SMART) ESG key performance index. Capable to develop an action plan with a detailed implementation plan, including specific measures, responsible personnel, timeline, and required resources.
Remark	The credits value of this unit of competency assumes that the practitioner has already possessed basic knowledge on corporate strategy and management.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Formulate risk management plans
Code	108565L6
Range	This unit of competency is applicable to the senior managerial staff of the automotive industry. Practitioners should be able to obtain a wide scope of information to formulate risk management plans for the enterprise in an ever-changing business environment.
Level	6
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (The scope and sources of risks)
	• Good understanding of the sources of risks such as natural disasters, fire, accidents, thefts, the quality of internal management.
	• Master the operating details and daily operation of the enterpris
	• Good understanding of the scope of risks faced by the enterprise, such as:
	  ○ Injury and death
	  ○ Direct property loss
	  ○ Inventory loss e.g. vehicles, spare parts
	  ○ Damages on equipment e.g. testing equipment
	  ○ Loss of talents e.g. experienced technical staff and managerial staff
	  ○ Business computer operation system failure
	  ○ Loss of important record and information
	  ○ Damage on the reputation of the enterprise
	2. Performance (Formulate risk management plans)
	• Be familiar with risk assessment reports to formulate risk management plans for the enterprise and make the most suitable preparation, such as:
	  ○ Being capable of selecting the most appropriate insurance plans for losses due to unpredictable tangible risks, e.g. property loss, inventory loss, damages on equipment
	  ○ Monitor and review organisational human resources policy for the risk of loss of talents e.g. training policy, promotion, remuneration conditions, etc.
	  ○ Monitor and review the daily operation and equipment management policy for the risk of operating equipment failure, e.g. unstable performance of computer operation systems or equipment
	  ○ Monitor and review the daily operation and monitoring systems for the risk of theft of inventory goods e.g. security systems, the reception and dispatch of inventory and relevant records
	  ○ Consider the public relation strategy and quality management systems for the risk of corporate reputation
	• Establish structural management systems and relevant indicators, collect data, conduct analysis, make improvement, monitor and prepare suitable resources for implementing the risk management plans and emergency and contingency measures.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of integrating various sorts of information to formulate different risk management plans or strategies for the enterprise to minimize or transfer possible risks; and • Capable of estimating and utilizing resources appropriately to implement the emergency and contingency measures as and when necessary.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate vehicle products sales strategy
Code	108587L6
Range	This unit of competency is applicable in workplaces relevant to vehicle products sales management. Practitioners should be able to analyse and assessing the competitive market environment of vehicle products in accordance with the overall objectives and operation strategy of the organisation and lead the subordinate staff to formulate effective and practicable sales strategies.
Level	6
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Market environment of vehicle products and sales strategies) • Good understanding of the significance of vehicle products sales to the entire organisation. • Master the competitive market environment of vehicle products. • Good understanding of the sales outlets and sales procedure of vehicle products. • Good understanding of consumer psychology. • Master the concept of foreign exchange risk. • Master the structure and composition of salespersons in the organisation. • Good understanding of the overall objectives and operation strategies of the organisation. • Good understanding of the government's environmental protection legislations on vehicle products. 2. Performance (Formulate sales strategies for the organization) • Master the significance of vehicle products sales to the entire organisation such as its influence on the organisation's achievements, profits and the development of service and spare parts business and even the image of the organisation. • Analyse and assess the competitive market environment of vehicle products as well as the opportunities and risks involved so as to lead the subordinate staff to formulate effective sales strategies. • Analyse different aspects of the vehicle products market so as to formulate effective sales strategies for the organisation, such as: ◦ Identify target customers, expand the market and attract new customers ◦ Maintain existing customers and understand the advantage of it ◦ adopt Relationship Marketing ◦ Set communication objectives ◦ Determine sales methods ◦ Cooperate with respective departments ◦ Request for resources • Allocate resource support to respective departments in accordance with organisational resources. • Formulation of assessment strategy for sales performance. • Peruse regular reports to assess the performance of sales strategies and seek for improvement and optimisation.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of understanding the responsibility of his rank, analysing and assessing the different aspects of the vehicle products market and the competitive environment, and leading the subordinate staff; and • Capable of formulating effective and practicable sales strategies in accordance with the overall objectives and operation strategies of the organisation to safeguard its achievements and profits of to facilitate its long-term development.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate management strategy for salespersons of vehicle products
Code	108588L6
Range	This unit of competency is applicable to the managerial staff of vehicle products sales. Practitioners should be able to master the knowledge of salespersons management, analysing and assessing the performance of salespersons and organisational demand for salespersons to formulate salespersons management strategy.
Level	6
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Recruitment, training and assessment of salespersons)
	• Master the structure and composition of salespersons, including:
	  ○ Sales regions
	  ○ Sales teams
	• Understand the resources planning of salespersons, including:
	  ○ Recruitment interviews
	  ○ Selection of salespersons
	• Master the management of salary policy for salespersons, including:
	  ○ Salary and commission policy
	  ○ Performance evaluation methods
	  ○ Relevant labour ordinances
	• Understand performance evaluation and staff training, including
	  ○ Formal and informal evaluation methods
	  ○ Formal and informal training methods
	• Master staff relation, including:
	  ○ Mechanism for settling internal conflicts
	  ○ Procedure of complaints and disciplinary action
	  ○ Staff motivation of and team building

	2. Performance (Formulate management strategy for salespersons)
	• Formulate organisation strategy for salespersons, such as:
	  ◦ Sales regions and the composition and structure of sales teams
	• Analyse the market supply of salespersons for respective departments, including:
	  ◦ Statistical information of respective salespersons
	  ◦ Market demand for the salespersons required
	  ◦ The cost for retaining talents, etc.
	• Formulate management strategy for salespersons in accordance with organisational operation management strategy and human resources strategy, including:
	  ◦ The strategy to recruit talents
	  ◦ The strategy to retain talents
	  ◦ Internal training mechanism and strategy
	  ◦ The rank of salesperson, promotion ladder, terms of reference of jobs, salary/commission, benefits and reward system, etc.
	  ◦ Estimate the salary/commission, benefits and rewards so as to seek relevant resources
	  ◦ Establish job employment mechanism
	  ◦ Build team spirit
	  ◦ Handle disputes
	  ◦ Establish performance evaluation scheme
	  ◦ Submit regular reports to the organisation

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of applying the knowledge on vehicle products salespersons management to formulate recruitment, training, monitoring and assessment strategies for those salespersons; and • Capable of analysing and assessing organisational demand for vehicle products salespersons in accordance with the objectives of the organisation.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate purchasing strategy for new vehicles
Code	108589L6
Range	This unit of competency is applicable to the decision-makers of the vehicle sales department for the formulation of forward-looking vehicle purchasing strategy matching with the operation and development of organisation.
Level	6
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of vehicles, and the actual market situation) • Master the characteristics and prices of different models of vehicles in the market. • Good understanding of the relationship between the economy of Hong Kong and the demand for vehicles; the cyclic changes of vehicle sales volume, customer needs and purchasing power. • Master the latest information on the traffic and transportation policy in Hong Kong. • Good understanding of the specifications of vehicles and the regulations governing vehicle sales. • Good understanding of the market position of the organisation as well as the resources available and risks affordable of the organisation.

	2. Performance (Formulate purchasing strategy)
	• Formulate the new vehicle purchasing strategy with the anticipation of various factors in market, such as the model, specification and disposition of equipment:
	  ◦ The impact of traffic and transportation policy of Hong Kong the development of local and cross border road networks public transportation networks migrating population and the development of new towns
	  ◦ Customer requirements on new vehicles and purchasing power:
	  ▪ preferences of target customers, such as high carrying capacity, high power or low fuel consumption and low emission, etc.
	  ▪ the trend in the economy change of Hong Kong
	  ▪ the rising and declining stages of popular styles or specifications
	  ▪ the extent of impact of overseas trend on local market
	  ▪ customer expectation on value-added products
	  ◦ Market demand:
	  ▪ tendencies of competitors
	  ▪ images of the models and the brands
	  ▪ feedbacks on after-sales services
	  ▪ customer satisfaction on the products
	  ▪ second-hand market value
	  ◦ Comply with local laws and regulations on vehicle specifications and sales
	  ◦ The social responsibility of the organisation
	  ◦ Bargaining power with the manufacturers
	• Determine the purchase volume according to market demand, customer acceptance of the brands and resources available from organisation.
	• Formulate contingency measures to cope with special incidents, such as dull sale, late supply, change of exchange rate.
	• Review the effectiveness of purchasing strategy and capable of making timely adjustment.
	• Effectively draw up the proposal presenting to the organisation for approval.
	• Apply for organisational support in resource.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of anticipating market demand for the formulation of forward-looking purchasing strategy including the styles and quantity of vehicles, matching the operation and development of the organisation; and • Capable of making timely adjustment to optimise the strategy in accordance with the effectiveness of vehicle purchase.
Remark	The credits value of this unit of competency assumes that the practitioner concerned has already possessed knowledge of vehicles, related regulations and procurement.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate marketing strategy
Code	108595L6
Range	This unit of competency is applicable to staff responsible for the marketing of vehicle products (e.g. vehicles, spare parts or repairing services).Practitioners should be able to apply marketing theory to explore local market orientation and making appropriate analysis and assessment on the latest market information to effectively formulate marketing plans and to enhance the popularity of the organisation and the vehicle products in the market, thereby fostering the vehicle products and services of the organisation.
Level	6
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Operation of the marketing and sales systems) • Good understanding of the significance of marketing work to the entire organisation such as the impact on the achievements, profits and the development of the maintenance and spare parts business and even the image of the organization. • Good understanding of the marketing environment and market segmentation: ◦ The distribution channels of vehicle products/services ◦ Pricing strategies and methods • Master the consumer pattern on vehicle products/services. 2. Performance (Formulate marketing strategy) • Analyse the operation concept of organisational sales systems. • Analyse the characteristics of local market and target customer groups. • Formulate marketing strategy for local market: ◦ Determine the focus and themes of sales products ◦ Determine the proportion in the use of different marketing media and formulate financial budget ◦ Understand the methods to retain existing customers and source new customers ◦ Formulate marketing portfolio to attract new customers ◦ Coordinate different departments for cooperation ◦ Estimate the resources required and seek support from the organisation • Assess the compatibility of the whole set of marketing strategy for the local market. • Submit reports, conduct analysis and make suggestions on a regular basis.
Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of formulating marketing strategy to meet the business development of the organisation in accordance with market environment and organisational operation plans.
Remark	The credits value of this unit of competency assumes that the practitioner concerned has possessed thorough understanding of the vehicle products market and marketing knowledge.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Sales and Marketing

Title	Formulate brand strategy for vehicles
Code	108596L6
Range	This unit of competency is applicable to the senior staff or marketing staff in the organisation. Practitioners should be able to integrate marketing theory and the professional knowledge of brand strategy and applying brand management policy to effectively lead their team to establish and promote vehicle brands.
Level	6
Credit	6 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Buyers and brands)
	• Good understanding of the significance of vehicle brands establishment to the entire organisation such as the impact on the achievements, profits and the development of the vehicle servicing and spare parts business and even the image of the organization.
	• Master vehicle brands.
	• Good understanding of consumer orientation, including:
	  ◦ The impact of pop culture on consumer behaviour
	  ◦ The change of consumer pattern and the causes of the changes
	• Good understanding of the value and the undertone of the brands.
	• Understand thoroughly the history of vehicle brands.

	2. Performance (Draw up concrete proposals to establish vehicle brands)
	• Communicate with vehicle manufacturers, including:
	  ○ Understand and formulate marketing strategies for vehicle brands
	  ○ Formulate the sales plans for vehicle brands
	• Instruct subordinate staff to formulate vehicle brand strategies, including:
	  ○ Determine brand positioning and formulate related strategies
	  ○ Establish the image and value of the brands
	  ○ Set the quality of the products/services
	  ○ Integrate with marketing, distribution and products strategies
	• Instruct subordinate staff to help them understand brand management and marketing strategies, including:
	  ○ Master brand management methods
	  ○ Determine the sales channels for the brands
	• Be familiar with the brands and the respective regulations of intellectual property rights, including:
	  ○ Understand the significance of intellectual property rights to the brands
	  ○ Understand the legal protection of brands
	• Brand management strategy:
	  ○ Ascertain that brand establishment is the long-term objective of organisational development
	  ○ Allocate organisational resources according to the budget plan
	  ○ Understand the core value of the brands
	  ○ Consistently maintain the image of the brands and product quality
	  ○ Monitor the suitability of the plans during implementation
	  ○ Rectify the policy problems during implementation
	  ○ Convey the messages relating to brand strategy to relevant departments and demand for full cooperation and regular submission of reports

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of integrating marketing theory and the professional knowledge of brand strategy to effectively formulate concrete proposals to establish vehicle brands; and • Capable of understanding brand management and marketing strategies to enhance the image and value of the brands.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Formulate sales strategy for parts and accessories
Code	108610L6
Range	This unit of competency is applicable to the practitioners of the auto parts and accessories purchasing and sales departments for the formulation of sales strategy according to the characteristics of different parts and accessories and the market situation to achieve the maximum operational benefit for the organisation.
Level	6
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories as well as the marketing and sales theory) • Master the latest information on the prices, market demand and market shares of different parts and accessories. • Good understanding of the characteristics of different parts and accessories, such as scope of applicability and market position. • Master the consuming behaviour of customers. • Good understanding of the characteristics and applicability of different marketing methods. • Know the characteristics, applicability and operation methods of different sales patterns. • Good understanding of the resources availability and risks affordability of the organisation. • Good understanding of the regulations governing the marketing and sales of goods. 2. Performance (Sales strategy of auto parts and accessories) • Formulate the sales strategy, such as partnership scheme, pricing and marketing, according to the characteristics of different parts and accessories, market situation, consuming pattern of customers and employable resources of the organisation. • Formulate contingency measures in case of dull sales. • Establish performance indicators for the sales strategy, such as sales volume. • Review the sales strategy, and make corresponding adjustments.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating effective sales strategy according to the characteristics of auto parts and accessories, actual market situation and the capability of the organisation; and • Capable of adjusting or improving the sales strategy with reference to its performance indicators.
Remark	The credits value of this unit of competency assumes that the practitioner concerned has already possessed the knowledge of auto parts and accessories as well as the marketing and sales of commodities.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Parts Management

Title	Formulate management strategy for auto parts and accessories warehouse
Code	108632L6
Range	This unit of competency is applicable to the practitioners of warehouse management department for the formulation of warehouse management strategy according to the characteristics of different auto parts and accessories, and the nature of the warehouses, etc., to optimise the operational efficiency of the organisation.
Level	6
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Characteristics of auto parts and accessories as well as the receipt, dispatch and storage methods of goods) • Good understanding of the characteristics of auto parts and accessories as well as the requirements on the methods of storage, receipt and dispatch, such as controlling of temperature and humidity. • Good understanding of respective regulations governing the operation of warehouses, such as the handling of dangerous goods, occupational safety, health and environmental protection. • Good understanding of the characteristics of warehouses, such as independent warehouses, warehouses attached to the servicing workshops or retailing points, the areas, floor loading and external infrastructure. • Master the requirements on inventory circulation, inventory level and categories.

	2. Performance (Formulate warehouse management strategy)
	• Formulate warehouse management strategy according to the characteristics of the warehouse, inventory requirements and related regulations, such as:
	  ◦ The locations for the receipt and dispatch of goods, storage area (including dangerous goods zone) and document management centre
	  ◦ The retrieval methods of different inventory items, such as first-in-first-out, last-in-first-out or lowest quantity
	  ◦ The labelling system identifying the location of inventory items
	  ◦ The standards of goods storage, retrieval and transportation
	  ◦ The standard of storage environment and monitoring instructions
	  ◦ Management of the fire prevention and security system of the warehouse, and respective implementation instructions
	  ◦ Insurance arrangement for the warehouse and inventory items, and respective implementation instructions
	  ◦ Requirements on staff performance
	• Draw up instructions for stock taking.
	• Establish different contingency plans to cope with different kinds of special incidents such as theft or fire.
	• Establish the performance indicators for warehouse management, such as the protection, retrieval and storage of inventory items.
	• Review the effectiveness of warehouse management, and make suggestions for improvement.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating a complete warehouse management strategy according to the characteristics of the warehouse, inventory requirements and related regulations; and • Capable of reviewing and improving the management strategy with reference to the performance indicators of warehouse management.
Remark	The credits value of this unit of competency assumes that the practitioner concerned already has possessed the knowledge of auto parts and accessories as well as logistics.

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Formulate quality management policy
Code	108781L6
Range	This unit of competency is applicable to the managerial staff of sizable enterprises in the automotive industry. Practitioners should be able to fully master the knowledge and techniques of quality management, organisational operation strategy and the culture of quality management to formulate forward-looking quality management policy.
Level	6
Credit	9 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Objectives of quality management) • Master the relationship of service performance, cost of quality, customer satisfaction and corporate image. • Master the quality management system specified by the vehicle manufacturers. • Good understanding of the characteristics and basic ideology of different quality management systems, such as accreditation methods, their popularity in the automotive industry, reputation, the supply of manpower familiar with respective quality management system, the integration with computer system, implementation cost, substantive effectiveness. 2. Performance (Formulate quality management policy) • Select the quality management system suitable for the organisation in accordance with the overall operation and development strategy of the organisation, such as ISO9001, QS9000, VDA6.2, the quality management system specified by the manufacturers, etc.; and select the suitable accreditation organisation and consultant company. • Analyse the discrepancy between the objectives of quality management and current quality management system, the quality control culture of the organisation and the cost of quality to formulate quality management policy, including: ◦ Quality management policy ◦ The objectives of quality management ◦ The operation method of quality management system under the quality management policy ◦ Measurement of the effectiveness of quality management system ◦ Review mechanism ◦ Improvement mechanism ◦ Communication channel • Compare the organisation's substantive ability in quality management with other enterprises with outstanding performance in quality management and hence consider participating in the campaign for the award of outstanding quality management e.g. Hong Kong Award for Industry.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of fully understanding the quality management culture and operation strategy of the organisation and selecting the quality management system for the organisation; and • Capable of formulating quality management policy in view of the discrepancy between the objectives of quality management and current quality management system of the organization, and cultivating confidence and determination in policy
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Implement total quality management strategy
Code	108782L6
Range	This unit of competency is applicable to the decision-making management of sizable enterprises in the automotive industry. Practitioners should be able to master the knowledge and skills of total quality management, organisational operation strategy and the culture of quality control to implement total quality management strategy in the organisation.
Level	6
Credit	9 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Theory of total quality management)
	• Master the methods and skills of Total Quality Management (TQM), such as:
	  ○ Quality Function Deployment
	  ○ Business Process Re-engineering
	  ○ Process Improvement
	  ○ Strategic Outsourcing
	  ○ Rapid Product Development
	• Good understanding of the concept of quality economics, including:
	  ○ Cost on quality
	  ○ The quality cost system by calculation in quality economics
	2. Performance (Implement total quality management strategy)
	• Implement total quality management strategy in the organisation:
	  ○ Apply the TQM method in the sales and after-sales services departments to facilitate the implementation of TQM strategy
	  ○ Attend to customer needs, including:
	  ▪ customer requirements
	  ▪ customer satisfaction
	  ▪ customer loyalty
	  ▪ the significance of customers to the organisation
	• Apply the concept of quality economics to analyse cost on quality and implement the quality cost system by calculation in quality economics; and incorporate the economic value of customer and staff loyalty into the system.
	• Continuously improve the quality management system through continuous learning:
	  ○ Continuously improving the quality management system through learning and updating organisational quality management
	  ○ Continuously improving the quality management system by improving the management methods and employee empowerment
	• Integrate and analyse various sorts of information for compiling of a proposal for implementation of the TQM system that can meet actual organisational operation.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the assessee shall prove that he/she is: • Capable of preparing a proposal for implementation of TQM on customer service bases by applying the TQM method; and • Capable of analyzing the cost on quality by applying the concept of quality economics.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Formulate customer service management strategy
Code	108798L6
Range	This unit of competency is applicable in workplaces relevant to the customer service management of vehicle sales and after-sales services. Practitioners should be able to formulate customer service management strategy in accordance with organisational mission and objectives to fulfill customer needs and facilitate the enhancement of organisational brands and business expansion.
Level	6
Credit	9 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Customer service management)
	• Master the significance of customer service management strategy to the reputation, achievements and profits of the entire organisation.
	• Master the theory of customer service management strategy, such as:
	  ◦ Comprehensive customer service package
	  ◦ The concept of service market e.g. market opportunity
	  ◦ Service operation strategy e.g. analysis of the allocation of resources
	  ◦ Delivery Total Service Package
	  ◦ Identify target customers
	  ◦ Customer services and communication management portfolio
	• Good understanding of service needs and supply strategy.
	• Good understanding of the measurement of service quality.
	• Good understanding of different customer service management strategies.

	2. Performance (Formulate customer service management strategy)
	• Master the theory of customer service management along with the knowledge on the characteristics of customers in the vehicle market to formulate effective strategy of customer service market portfolio:
	  ◦ Guide subordinate staff to formulate overall customer service management plan, budgets and other supporting requirements, such as:
	  ▪ service management operation
	  ▪ customer service hardware management
	  ▪ customer service education
	  ▪ promotion of customer service, e.g. set up vehicle fan club
	  ▪ coordination between the sales And service departments
	  ▪ internal staff training
	  ▪ allocation of and human resources and associated hardware
	  ▪ guide subordinate staff to formulate logical strategy for external and internal service management to change the service culture of the organisation
	  ▪ change the strategies of organisational structure or systems e.g. recruitment, training, punishment and reward and staff commitment.
	  ▪ customer service communication portfolio, including electronic and networking services
	  ▪ guide subordinate staff to determine the scope of customer services audit, e.g. customers, staff, management level, external stake holders
	• Guide subordinate staff to set the yardstick of service quality, find out the deficiencies in customer services, formulate policies to work for structural quality improvement so as to establish customer service quality assurance system.
	• Instruct subordinate staff to formulate plans for recruiting public relations agency to cope with extra demands e.g. organise large-scale vehicle exhibition
	• Instruct subordinate staff to formulate customer services budget.
	• Examine the overall resources of the organisation and allocate appropriate resources support.
	• Assess the effectiveness of customer service operation and its impact on the entire organisation from information on the submitted reports and data.

Assessment Criteria	The integrated outcome requirement of this unit of competency is that the practitioner being assessed shall prove that he/she is: • Capable of instructing subordinate staff to formulate effective customer service management strategy in accordance with organisational mission and objectives so as to fulfill customer needs, protect organisational reputation and safeguard its achievements and profits.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Formulate customer relation management strategy
Code	108799L6
Range	This unit of competency is applicable in workplaces relevant to the customer relation management of vehicle sales and after-sales services. Practitioners should be able to formulate effective customer relation management strategy in accordance with organisational mission and objectives to maintain existing customers, attract new customers, source potential customers to enhance business.
Level	6
Credit	9 *(For Reference Only)*

Competency	**Performance Requirements**
	
	1. Knowledge (Customer relation management)
	• Master the significance of customer relation management to the reputation, achievements and profits of the entire organisation.
	• Master customer relation management:
	  ◦ Market orientation and customer orientation
	  ◦ Interests of customer relation
	  ◦ Purposes of customer relation
	  ◦ Characteristics of customer relation
	• Master customer relation management strategy, including:
	  ◦ Transaction management
	  ◦ Relation management
	  ◦ Suppliers and customers promotion
	• Good understanding of data base system for customer information.

	2. Performance (Formulate customer relation management strategy)
	• Through mastering the theory of customer relation management and the knowledge of the characteristics of customers in the vehicle market, coach subordinate staff to formulate customer relation management strategy suitable for the organisation:
	  ◦ Establish the structure of customer relation management system
	  ◦ Establish the methods, procedure and workflow for maintaining customer relation management, such as:
	  ▪ selection criteria of customers
	  ▪ methods to source new customers
	  ▪ classification of customers
	  ▪ assess customer loss and take remedial measures
	  ▪ procedures for handling and following up on customer's complaints
	  ▪ take the edge of customer relation to create and maintain customer relation
	  ▪ explore and strengthen customer relation
	  ▪ apply data base techniques to implement customer relation strategy
	  ▪ departmental coordination and cooperation
	  ▪ resources requirement and budget estimates
	  ▪ reporting format, content and mechanism
	• Demand regular submission of reports and data to assess the effectiveness of the customer relation operation and its impact on the entire organisation.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the professional knowledge and techniques of customer relation management; and • Capable of leading subordinate staff to formulate effective customer relation management strategy in accordance with the overall objectives of the organisation to enhance the image of the organisation and foster business; and protect and safeguard the reputation, achievements and profits of the organisation to facilitate long-term development.
Remark	

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Formulate comprehensive occupational safety and health policy for the enterprise
Code	108811L6
Range	This unit of competency is applicable to the managerial staff of sizable enterprises in automotive industry. Practitioners should be able to formulate comprehensive occupational safety and health policy for the enterprise.
Level	6
Credit	9 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Statutory requirements on occupational safety and health) • Master the statutory requirements on occupational safety and health, related knowledge and future trend. • Master the overall operation strategy of the enterprise, market positioning and corporate image. • Good understanding of the key of success for organisations with distinctive achievements in occupational safety and health. 2. Performance (Formulate comprehensive occupational safety and health policy for the enterprise) • Fully understand the internal and external factors when formulating the comprehensive occupational safety and health policy for the enterprise: ◦ Select the appropriate occupational safety and health system for the enterprise ◦ Define relevant performance indicators ◦ Establish long-term and short-term objectives • Understand the discrepancy between the expected achievement and current performance by analysing so as to set up relevant management systems, such as: ◦ Prepare the required resources ◦ Monitor the operation of the systems ◦ Establish internal communication channels ◦ Review effectiveness and suggest improvement measures when appropriate • Take appropriate actions ensuring that the occupational safety and health policy and its effectiveness can meet relevant statutory requirements.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being asessed shall prove that he/she is: • Capable of fully understanding the statutory requirements of occupational safety and health and related knowledge to formulate the occupational safety and health policy to meet the practical need of the enterprise in a forward-looking manner; and • Capable of taking appropriate actions to ensure that the occupational safety and health policy of the enterprise and its effectiveness shall meet relevant statutory requirements.
Remark	The relevant legislations involved in this unit of competency are as follows:

	• Occupational Safety and Health Ordinance • Factories and Industrial Undertakings Ordinance • Factories and Industrial Undertakings (Safety Management) Regulation • Code of Practice on Safety Management

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Common Competency

Title	Formulate comprehensive environmental protection policy for the enterprise
Code	108812L6
Range	This unit of competency is applicable to the managerial staff of sizable enterprises in the automotive industry. Practitioners should be able to obtain a wide scope of environmental protection information to formulate a comprehensive environmental protection policy that can meet the practical operation of the enterprise and statutory requirements.
Level	6
Credit	9 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Obtain a wide scope of environmental protection information) • Master the statutory requirements on environmental protection, the code of practice on environmental protection and the future trend. • Master the comprehensive operation strategy, marketing position and corporate image established by the enterprise. • Good understanding of the environmental protection policies and systems established by the vehicle manufacturers. • Good understanding of the international standard of environmental protection and respective regulations. • Good understanding of the successful elements of organisations with outstanding achievements in the industry. • Good understanding of the content of risk assessment reports.

	2. Performance (Formulate comprehensive environmental protection policy for the enterprise)
	• Fully understand the internal and external factors so as to formulate a comprehensive environmental protection policy that can meet the actual operation of the enterprise:
	  ◦ Cope with the skill-upgrading trend in the industry
	  ◦ Incorporate environmental protection techniques into the overall business/operation
	  ◦ Select the environmental protection system suitable for the organisation
	  ◦ Establish good relationship with environmental protection groups
	  ◦ Define respective performance indicators
	  ◦ Define long-term and short-term objectives
	• Identify and analyse the discrepancy between the anticipated objectives and current performance so as to:
	  ◦ Set up relevant management system
	  ◦ Prepare the required resources
	  ◦ Establish the auditing procedure
	  ◦ Monitor the operation of the systems
	  ◦ Build internal communication channels
	  ◦ Review the effectiveness and make suggestions for improvement measures to be taken
	• Take appropriate action ensuring that the environmental protection strategy of the enterprise and its achieved effectiveness can meet respective statutory requirements on environmental protection.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of formulating a comprehensive environmental protection policy in line with the actual situation of the organization; and • Capable of ensuring that the enterprise's environmental protection policies and the results achieved shall meet the environmental statutory requirements.
Remark	The major legislations/rules involved in this unit of competency are as follows: • Noise Control Ordinance • Waste Disposal Ordinance • Water Pollution Control Ordinance • Ozone Layer Protection Ordinance • Air Pollution Control Ordinance • Occupational Safety and Health Ordinance

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Establish the testing procedure for vehicle performance
Code	111772L6
Range	This unit of competency is applicable to the senior engineering staff of the vehicle service and inspection departments. Practitioners should be able to master the standards and methodology of various vehicle performance tests for establishing the qualified testing procedure with approved testing equipment.
Level	6
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Standards and vehicle performance test) • Fully master the standard parameters (e.g., the manufacturer standard, approved international standard and respective regulations), testing methods and the requirements on the operating equipment and testing environments of various vehicle performance test items, such as: ◦ Braking efficiency ◦ Tilt limit of vehicle body ◦ Illumination and aim alignment ◦ Engine power and fuel consumption ◦ Exhaust emission ◦ Working noise ◦ Effectiveness of automatic shift ◦ Stability control ◦ Advanced driver-assistance system function ◦ Fuel cell and traction battery efficiencies (fuel cell electric vehicle specific) ◦ Traction motor power (electrified vehicle specific)

	2. Performance (Establish the testing procedure for vehicle performance)
	• Draw up the items for the vehicle performance test according to job requirements, such as the test of:
	  ○ Braking efficiency
	  ○ Vehicle body tilt
	  ○ Illumination and aim alignment
	  ○ Engine power and fuel consumption
	  ○ Exhaust emission
	  ○ Working noise
	  ○ Automatic shift
	  ○ Driving stability
	  ○ Advanced driver-assistance system
	  ○ Fuel cell and traction battery (fuel cell electric vehicle specific)
	  ○ Traction motor (electrified vehicle specific)
	• Establish testing procedure and supporting requirements, such as testing environment and setup, according to the characteristics and standard of various testing items, including:
	  ○ The specifications of testing equipment
	  ○ Obligatory preparation prior to test
	  ○ Testing procedure and safety measures
	  ○ Records of data and other information
	• Review the effectiveness of the methods and the testing procedure, and be able to make adjustments or improvements.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the standard and methods of various vehicle performance tests and establishing qualified testing procedures, including the preparation requirements prior to the test and environmental requirements to obtain recognised testing data; and • Capable of reviewing the effectiveness of the testing procedure and methodology, and making adjustments or improvements.
Remark	The credit value of this competency unit assumes that the practitioner possesses eminent knowledge of the structure of the car, the working principle and the testing of each system. (This UoC replaced 108745L6)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Analyse the vehicle test result and evaluate the performance
Code	111773L6
Range	This unit of competency is applicable to the senior engineering staff of the vehicle service and inspection departments. Practitioners should be able to master the standards of various vehicle specifications and performance, analyse data, evaluate the performance of vehicle systems and suggest optimisation to enhance vehicle performance.
Level	6
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Testing standards and vehicle specifications) • Master the methods of handling testing data, such as the reliability assessment, data integration, quantification and presentation. • Fully master the standard parameters of various vehicle specifications and performance tests (e.g., manufacturer standard, approved international standard and respective regulations).

	2. Performance (Analyse results, evaluate performance and make optimisation suggestions)
	• Integrate, quantify and ascertain the reliability of data obtained from various testing items, and analyse the causes for discrepancies according to standard parameters.
	• Evaluate the performance and make optimisation suggestions, such as:
	  ○ The effect of chassis stability control affected by the braking, suspension, steering, tyres and traction control systems
	  ○ The effect of various adaptive systems, including but not limited to emergency braking, lane changing alert, cruise control and lighting
	  ○ The anti-roll ability affected by factors of system layout and vehicle body design
	  ○ The accuracy of illumination and aim alignment of the lighting system
	  ○ The impact of the performance of the engine and its subsystems on power output and fuel consumption
	  ○ The impact of the performance of:
	  ▪ the emission control and after-treatment systems as well as the engine and its subsystems on the emission of pollutant concentration of combustion engine vehicles, or
	  ▪ the driving range and charging efficiency of the traction battery of a given energy storage capacity for electric and hybrid electric vehicles, or
	  ▪ the fuel cell system on the hydrogen consumption for a given driving range of the fuel cell electric vehicle
	  ○ The impact on the performance of the thermal management system of the traction battery, control modules and the traction motor in the optimisation of the normal energy transfer efficiencies of electrified vehicles
	  ○ The suppression effect of working noise
	  ○ The smoothness and accuracy of automatic shift
	• Review the effectiveness of respective analysis and evaluation, and be able to make adjustments or improvements to the shortfalls.

Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the techniques of testing data handling and analysing, comparing the data with the standard parameters to ascertain the performance of the testing items, and analysing the causes of discrepancies; and • Capable of accurately evaluating the performance of vehicle systems and suggesting optimisation to the shortfalls for enhancing vehicle performance.
Remark	The credit value of this competency unit assumes that the practitioner has possessed a certain understanding of the structure of various types of vehicles, the working principles and testing of each system. (This UoC replaced 108746L6)

Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Corporate Management

Title	Formulate corporate development strategy
Code	108566L7
Range	This unit of competency is applicable to the senior decision-making and managerial staff of sizable enterprises in the automotive industry. Practitioners should be able to master the overall development trend of the automotive industry in a business environment with continuous escalation in both the industrial technology and the customer requirements, and formulating development strategy for the enterprise.
Level	7
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (The environment of the society and the industry as well as the strength of the enterprise) • Fully master the development trends of society and the automotive industry, as well as the impact of respective international and local regulations affecting the industry. • Fully master the economic development of society. 2. Performance (Formulate corporate development strategy) • Analyse the cultural behaviour and scope of services, etc. to which the enterprise belongs to, and those of the competitors. • Analyse various aspects of the organisation such as operation management, occupational safety and health, environmental protection management, quality management, human resources management, financial management, development of new services, risk management based on sufficient data and rationale. • Collect information on the development of the enterprise for analysis and reference purposes; benchmarking with that of the industry. • Formulate corporate development direction and strategy, such as: ◦ Corporate development strategy ◦ Business operation strategy ◦ Human resources management strategy ◦ Financial strategy ◦ Services development strategy ◦ Risk management strategy ◦ Communication channels • Proactively assess future trends in the development of automotive technology and review existing operational management systems to match the overall corporate policies of the future.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of thoroughly analyzing and integrating data from different areas to formulate development direction and strategy for enterprises; and

	• Capable of mastering a variety of management skills, so that the development strategy can be at par with the times and achieve internal harmony.
Remark	

新舊能力單元編號對照表
Mapping table for the old and updated UoC Codes

舊能力單元編號 Old UoC Code	更新後之能力單元編號 Updated UoC Code	資歷級別 QF Level	更新後之能力單元名稱	Updated UoC Title	備註 Remarks
• 108800L1 • 108638L1 • 108639L1	111655L1	1	識別常見危險化學品，理解其特性及貯存方法	Identify typical dangerous chemicals, understand their characteristics and storage	合併能力單元 Merging UoCs
108802L2	111656L2	2	執行職安健作業指引	Carry out the operation guidelines on occupational safety and health	能力單元更新 UoC Update
108785L1	111657L2	2	運送車輛	Transport vehicles	能力單元更新 UoC Update
108803L3	111659L3	3	處理常見危險化學品、污染物及廢物	Handle typical dangerous chemicals, pollutants and waste	能力單元更新 UoC Update
108793L2	111660L3	3	接待顧客	Attend to customers	能力單元更新 UoC Update
108792L5	111661L5	5	制定維修工場的管理系統	Establish management system for servicing workshops	能力單元更新 UoC Update
108809L5	111662L5	5	制定職安健管理系統	Establish occupational safety and health management system	能力單元更新 UoC Update
108633L1	111663L2	2	識別車輛系統和部件的結構及其運行原理	Identify the structure and operating principle of vehicle systems and components	能力單元更新 UoC Update
108635L1	111664L2	2	拆卸、更換和重裝汽車系統組件	Dismantle, replace and re-assemble vehicle system components	能力單元更新 UoC Update
108636L1	111665L2	2	拆卸、檢查及更換汽車低壓電氣系統及配件	Dismantle, inspect and replace the low-voltage vehicle electrical systems and accessories	能力單元更新 UoC Update
108642L1	111666L2	2	識別電單車系統及零部件的結構與運作原理	Identify the structure and operating principle of motorcycle systems and components	能力單元更新 UoC Update
108651L2	111667L2	2	檢查及維修內燃機車輛的低壓電池、充電及起動系統	Check and repair the low-voltage battery, charging and starting systems of combustion engine vehicles	能力單元更新 UoC Update
108643L2	111668L2	2	使用一般焊接設備	Use general welding equipment	能力單元更新 UoC Update
108658L2	111669L2	2	檢修前後擋風玻璃	Check and repair front and rear windscreens	能力單元更新 UoC Update
108661L2	111670L2	2	檢查及修補車身金屬板	Check and mend the metallic panels of vehicle body	能力單元更新 UoC Update
108664L2	111671L2	2	去除舊漆膜及金屬表面處理	Remove paint and process surface treatment on metallic panel	能力單元更新 UoC Update
108665L2	111672L2	2	進行填灰及研磨工序	Carry out body filling and sanding	能力單元更新 UoC Update
• 108666L2 • 108667L2 • 108673L1	111673L2	2	進行車身貼紙及噴塗(包括塑料)工序	Carry out vehicle body masking and painting (include plastic components) process	合併能力單元 Merging UoCs
• 108634L1 • 108645L2	111674L2	2	掌握車輛維修所需工具及設備的應用技巧	Master the application of tools and equipment for vehicle servicing	合併能力單元 Merging UoCs
• 108652L2 • 108653L2 • 108654L2 • 108686L2	111675L2	2	檢查及修復車載低壓電器系統	Check and repair the low-voltage electrical systems onboard	合併能力單元 Merging UoCs

舊能力單元編號 Old UoC Code	更新後之能力單元編號 Updated UoC Code	資歷級別 QF Level	更新後之能力單元名稱	Updated UoC Title	備註 Remarks
108669L2	111676L2	2	護理車身(包括打蠟)及車廂	Car detailing and waxing work	能力單元更新 UoC Update
108759L2	111678L2	2	組裝車身框架	Build the body frame	能力單元更新 UoC Update
108760L2	111679L2	2	組裝地板、車窗、通道、梯級及車門	Assemble the floor, windows, passageways, stairs and doors of vehicle	能力單元更新 UoC Update
108761L2	111680L2	2	組裝座位及內部裝置	Assemble seats and interior fittings	能力單元更新 UoC Update
108764L2	111681L2	2	製作車身夾具	Produce vehicle body building fixtures	能力單元更新 UoC Update
108765L2	111682L2	2	組裝車身板	Assemble vehicle body panels	能力單元更新 UoC Update
108646L2	111684L2	2	檢修及更換輪胎	Check, repair and replace tyres	能力單元更新 UoC Update
108641L1	111685L2	2	進行汽車的日常維護	Carry out Routine Vehicle Maintenance	能力單元更新 UoC Update
108684L2	111686L2	2	交付汽車前的準備及檢查	Pre-delivery Preparation and Inspection of vehicle	能力單元更新 UoC Update
108685L2	111687L2	2	拆卸和更換汽車發動機單元及零部件	Remove and replace vehicle engine units and components	能力單元更新 UoC Update
• 108676L2 • 108680L2	111689L2	2	拆卸和更換電單車動力總成及相關零部件	Remove and replace motorcycle powertrain and associated components	合併能力單元 Merging UoCs
• 108649L2 • 108650L2 • 108687L2	111691L2	2	檢查及維修汽車的傳動和底盤系統	Check and repair vehicle transmission and under-chassis systems	合併能力單元 Merging UoCs
108671L2	111695L2	2	汽車安全的監管合規檢測	Vehicle safety inspection for regulatory compliance	能力單元更新 UoC Update
108762L2	111696L2	2	在汽車上組裝暖氣、通風及空調系統	Assemble heat, ventilation and air-conditioning (HVAC) systems on vehicles	能力單元更新 UoC Update
108688L2	111698L3	3	進行電動汽車低壓電氣系統的維護與檢查作業	Maintenance and inspection of low-voltage electrical systems on electrified vehicle	能力單元更新 UoC Update
108689L2	111699L3	3	檢查及維修電動汽車的機械故障與損壞	Check and repair mechanical breakdown and damage on electrified vehicles	能力單元更新 UoC Update
108690L2	111700L3	3	電動汽車高壓電力系統的斷電和復電	Isolate and reinstate the high-voltage electrical system of electrified vehicles	能力單元更新 UoC Update
108692L2	111701L3	3	分解、維修及組裝電動車的牽引電機	Dismantle, repair and assemble the traction motors of electrified vehicles	能力單元更新 UoC Update
108693L2	111702L3	3	檢查及維修電動車的空調、冷卻及動力轉向系統	Check and repair the air-conditioning, cooling and power steering systems of electrified vehicles	能力單元更新 UoC Update
108703L3	111704L3	3	進行內燃機汽車低壓電池、充電和起動系統的故障診斷和維修	Conduct fault diagnosis and repair on the low-voltage battery, charging and starting systems of combustion engine vehicles	能力單元更新 UoC Update
108691L2	111705L3	3	維護及修理非帶電的電動化車輛系統	Maintain and repair the non-live electrified vehicle systems	能力單元更新 UoC Update
108714L3	111707L3	3	使用專用設備檢查車輛的道路適用性	Examine the roadworthiness of vehicle with specific equipment	能力單元更新 UoC Update
108709L3	111711L3	3	應用電子儀器量度車身/底盤	Measure vehicle body/chassis with specialised electronic instruments	能力單元更新 UoC Update
108710L3	111712L3	3	修正大型結構性的損毀	Rectify large-scale structural damages	能力單元更新 UoC Update

舊能力單元編號 Old UoC Code	更新後之能力單元編號 Updated UoC Code	資歷級別 QF Level	更新後之能力單元名稱	Updated UoC Title	備註 Remarks
108711L3	111713L3	3	檢查及維修鋁合金車身	Check and repair aluminium alloy vehicle body	能力單元更新 UoC Update
108712L3	111714L3	3	掌握駁口噴塗處理技術	Master the techniques of blending	能力單元更新 UoC Update
108713L3	111715L3	3	修補面漆	Remedy paint defects (spot painting)	能力單元更新 UoC Update
108717L3	111716L3	3	界定汽車車身漆膜的缺失及執行修復工序	Defining defects of paint coating	能力單元更新 UoC Update
108694L2	111717L3	3	拆卸和維修電動化車輛的無線網路、通用封包無線服務和各種感應器	Dismantle and repair the Wireless Fidelity (Wi-Fi), General Packet Radio Service (GPRS) and various sensors for electrified vehicles	能力單元更新 UoC Update
108702L3	111718L3	3	維護各種車輛維修工具和設備	Maintain various vehicle servicing tools and equipment	能力單元更新 UoC Update
108708L3	111719L3	3	進行各類車輛暖氣、通風及空調系統的故障診斷與排除	Conduct fault diagnosis and rectification of the heating, ventilation and air conditioning (HVAC) system on vehicles	能力單元更新 UoC Update
108749L3	111720L3	3	執行保險索償的維修報價工作	Execute the work on the repair quotation for insurance claims	能力單元更新 UoC Update
108668L2	111721L3	3	調配漆油	Mix paints	能力單元更新 UoC Update
• 108700L3 • 108724L3	111722L3	3	診斷及修復車輛傳動系統的故障	Diagnose and rectify vehicle drivetrain faults	合併能力單元 Merging UoCs
108726L3	111723L3	3	為同事提供車輛維修技術的技術支援和建議	Provide technical support and advice to colleagues for vehicle repairing techniques	能力單元更新 UoC Update
108708L3	111724L3	3	進行各類車輛暖氣、通風及空調系統的故障診斷與排除	Conduct fault diagnosis and rectification of the heating, ventilation and air conditioning (HVAC) system of various vehicle types	能力單元更新 UoC Update
108696L3	111725L3	3	診斷內燃機車輛的各類液體燃料供應系統故障	Diagnose various faulty liquid fuel supply systems of combustion engine vehicles	能力單元更新 UoC Update
108648L2	111727L3	3	檢修汽車各類燃料供應系統	Check and repair various types of fuel supply systems	能力單元更新 UoC Update
108647L2	111728L3	3	大修內燃機	Overhaul internal combustion engine	能力單元更新 UoC Update
108656L2	111730L3	3	檢查和維修汽車空調系統零部件	Check and repair vehicle air-conditioning system components	能力單元更新 UoC Update
108682L2	111731L3	3	檢查和大修電單車機械部件	Inspect and overhaul motorcycle mechanical units	能力單元更新 UoC Update
108644L2	111732L3	3	掌握車身焊接技術	Perform Vehicle body welding	能力單元更新 UoC Update
• 108704L3 • 108705L3 • 108706L3	111733L3	3	對車載低壓電氣系統進行故障診斷	Conduct fault diagnosis on the low-voltage electrical systems onboard	合併能力單元 Merging UoCs
• 108697L3 • 108722L3	111734L3	3	診斷及修復故障的汽車引擎和組件	Diagnose and rectify the faulty vehicle engine and components	合併能力單元 Merging UoCs
• 108698L3 • 108723L3	111735L3	3	診斷及修復車輛底盤系統的故障	Diagnose and rectify the faulty vehicle under-chassis systems	合併能力單元 Merging UoCs
108716L3	111736L3	3	安排汽車檢驗	Arrange vehicle examination	能力單元更新 UoC Update
108699L3	111744L4	4	診斷電動車驅動控制系統的故障	Conduct fault diagnosis on the propulsion control systems of electrified vehicles	能力單元更新 UoC Update

舊能力單元編號 Old UoC Code	更新後之能力單元編號 Updated UoC Code	資歷級別 QF Level	更新後之能力單元名稱	Updated UoC Title	備註 Remarks
108729L3	111745L4	4	檢修汽車智能控制系統及設備	Check and repair vehicle intelligent control systems and devices	能力單元更新 UoC Update
108725L3	111748L4	4	拆卸及更換車載高壓電池	Remove and replace the vehicle high-voltage batteries onboard	能力單元更新 UoC Update
108731L4	111749L4	4	為汽車維修工序進行風險評估	Conduct risk assessment on vehicle servicing work	能力單元更新 UoC Update
108733L4	111750L4	4	掌握內燃機汽車動力系統的複雜技術	Master complicated techniques of the power systems on combustion engine vehicles	能力單元更新 UoC Update
108743L4	111751L4	4	執行車輛的性能測試	Execute performance tests on vehicles	能力單元更新 UoC Update
108754L4	111752L4	4	核實車輛保險理賠個案	Verify cases of vehicle insurance claims	能力單元更新 UoC Update
108756L4	111753L4	4	協調汽車損毀的保險索償	Coordinate insurance claims of vehicle damage	能力單元更新 UoC Update
108735L4	111754L4	4	掌握底盤穩定控制的複雜技術	Master the complicated techniques of chassis stability control	能力單元更新 UoC Update
108737L4	111755L4	4	掌握懸掛系統的複雜技術	Master the complicated techniques of suspension systems	能力單元更新 UoC Update
108734L4	111756L4	4	掌握傳動系統的複雜技術	Master the complicated techniques of transmission systems	能力單元更新 UoC Update
108738L4	111757L4	4	掌握電氣和電子系統的複雜技術	Master the complicated techniques of electrical and electronic systems	能力單元更新 UoC Update
108741L4	111758L4	4	掌握混合動力汽車動力系統的複雜技術	Master the complicated techniques of the power system on hybrid electric vehicles	能力單元更新 UoC Update
108741L4	111759L4	4	掌握電動車動力系統的複雜技術	Master the complicated techniques of the power system on battery electric vehicles	能力單元更新 UoC Update
108741L4	111760L4	4	掌握氫燃料電池電動車動力系統複雜技術	Master the complicated techniques of the power system on hydrogen fuel cell electric vehicles	能力單元更新 UoC Update
108755L4	111764L4	4	估算車輛意外損毀的維修費用	Estimate the repair cost for accidental damage of vehicles	能力單元更新 UoC Update
108742L4	111765L4	4	診斷和修復車輛廢氣排放控制系統	Diagnose and rectify vehicle exhaust emission control systems	能力單元更新 UoC Update
108744L5	111769L5	5	優化汽車系統性能	Optimise the performance of vehicle systems	能力單元更新 UoC Update
108745L6	111772L6	6	制定汽車性能的測試程序	Establish the testing procedure for vehicle performance	能力單元更新 UoC Update
108746L6	111773L6	6	分析汽車測試結果並評估性能	Analyse the vehicle test result and evaluate the performance	能力單元更新 UoC Update
108604L2	111775L4	4	汽車業電子商貿	Application of e-commerce in automotive services	能力單元更新 UoC Update
108572L1	111776L2	2	介紹各類型車輛及其配件的特性及相關的產品交易資訊	Introduce the characteristics of different types of vehicles and their accessories, and the product transaction information	能力單元更新 UoC Update
108578L3	111778L3	3	安排顧客測試車輛	Arrange vehicle test drive for customers' interests	能力單元更新 UoC Update
108600L4	111779L4	4	展示/陳列汽車	Exhibit / Display vehicles	能力單元更新 UoC Update
108583L4	111780L4	4	採購舊車	Purchase used vehicles	能力單元更新 UoC Update