Open Awards Qualification Unit

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1 Unit Details

Unit Title:	Knowledge of Light Vehicle Engine Mechanical, Lubrication and Cooling System Units and Components
QAC Code:	H/506/3577
Level:	Level 2
Credit Value:	3
Minimum GLH:	20

2 Learning Outcomes and Criteria

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand how the main light vehicle engine mechanical systems operate	1.1 Identify light vehicle engine mechanical system components
	1.2 Describe the construction and opration of light vehicle engine mechanical systems • Four stroke • Spark ignition • Compression ignition • Rotary
	1.3 Compare key light vehicle engine mechanical system components and assemblies against alternatives to identify differences in construction and operation
	1.4 Identify the key engineering principles that are related to light vehicle engine mechanical systems • Compression ratios • Cylinder capacity • Power • Torque

	1.5	State common terms used in light vehicle engine mechanical system design • Tbc • Bdc • Stroke • Bore
2. Understand how light vehicle engine lubrication systems operate	2.1	Identify light vehicle engine lubrication system components
	2.2	Decribe the construction and operation of light vehicle engline lubrication components and systems • Full flow • By pass • Wet sump • Dry sump
	2.3	Compare key light vehicle engine lubrication system components and assemblies to identify differences in construction and operation
	2.4	Identify the key engineering principles that are related to light vehicle engine lubrication systems • Classification of lubricants • Properties of lub recants • Methods of reducing friction
	2.5	State common terms used in light vehicle engine lubrication system design
3 Understanding how light vhical engine cooling, heating and ventilation systems operate	3.1	Identify light vehicle engine cooling, heating and ventilation system components
	3.2	Describe the construction and operation of light vehicle engine cooling, heating and ventilation systems
	3.3	Compare key light vehicle engine cooling, heating and ventilation system components and assemblies against alternatives to identify differences in construction and operation
	3.4	Identify the key engineering principles that are related to light vehicle engine cooling, heating and ventilation systems • Heat transfer • Linear and cubical expansion • Specific heat capacity • Boiling point of liquids
	3.5	State common terms used in key light vehicle engine cooling, heating and ventilation system design

4	Understanding how to check, replace and test light vehicle engine mechanical, lubrication and cooling systems units and components	4.1	Describe common type of testing methods used to check the operation of engine mechanical, lubrication and cooling systems and their purpose
		4.2	Describe common types of testing methods used to check the operation of engine mechanical, lubrication and cooling systems and their purpose
		4.3	Describe how to test and evaluate the performance of replacement units against vehicle specification
		4.4	Identify common faults found in light vehicle engine mechanical, lubrication and cooling systems and their causes