

New Zealand Certificate in Automotive Electrical Engineering (Level 4) [Ref 3460] v2			
Level	4	Credits	190
Assessment standards aligned with qualification outcomes			
Outcome	Assessment standards		
Outcome 1 Contribute to workplace safety and maintain a safe and effective workplace. (Credits 15)	29582 - Demonstrate knowledge of customer service requirements and business responsibilities in the automotive industry (Level 3, credits 4) 31065 - Demonstrate knowledge of estimates and quotations in the automotive industry (Level 4, credits 3)		
Outcome 2 Diagnose and repair or replace sensors and actuators, control units and associated wiring and communication networks in a range of vehicles or machines. (Credits 100)	30879 - Demonstrate knowledge of hybrid electric and battery electric vehicle or machine systems and safety (Level 4, credits 5) 30885 - Demonstrate knowledge of automotive diagnostic and repair procedures (Level 3, credits 5) 30880 - Describe automotive electronic components, actuators, sensors and signals (Level 3, credits 5) 31056 - Demonstrate knowledge of engine management system fault diagnosis (Level 4, credits 4) 31057 - Demonstrate knowledge of diagnosing automotive emission control system faults (Level 3, credits 4) 31058 - Demonstrate knowledge of a diesel engine management system (Level 4, credits 2) 31194 - Demonstrate knowledge of carburettor operation (Level 3, credits 5) 31062 - Demonstrate knowledge of automotive body electrical and electronic systems (Level 4, credits 6) 31063 - Demonstrate knowledge of hydraulic brake system fault diagnosis (Level 4, credits 2) 31064 - Describe the operation of vehicle electronic braking systems (Level 4, credits 4) 31066 - Demonstrate knowledge of electronically controlled steering and suspension systems, and system fault diagnosis (Level 4, credits 6) 31127 - Demonstrate knowledge of an automotive climate control system (Level 3, credits 3) 31124 - Diagnose and repair faults in an automotive climate control system (Level 4, credits 6)		

	<p>30875 - Service hybrid electric and battery electric vehicle or machine high voltage systems (Level 4, credits 5)</p> <p>31048 - Diagnose and repair engine management system faults (Level 4, credits 10)</p> <p>31049 - Diagnose and repair automotive emission control system faults (Level 4, credits 10)</p> <p>31053 - Diagnose and repair automotive body electrical and electronic system faults (Level 4, credits 5)</p> <p>31055 - Diagnose and repair vehicle electronic braking system faults (Level 4, credits 8)</p> <p>31047 - Diagnose and repair electronically controlled steering and suspension system faults (Level 4, credits 10)</p>
<p>Outcome 3</p> <p>Use specialist tools and electrical component diagrams to locate, repair and replace electrical and electronic components in a range of vehicles or machines.</p> <p>(Credits 65)</p>	<p>30881 - Describe automotive scan tools and oscilloscopes (Level 4, credits 5)</p> <p>31059 - Demonstrate knowledge of electronically controlled manual transmissions (Level 3, credits 4)</p> <p>31060 - Demonstrate knowledge of diagnosing faults in automotive driveline systems (Level 3, credits 2)</p> <p>31061 - Demonstrate knowledge of diagnosing faults in Supplemental Restraint Systems (Level 3, credits 3)</p> <p>30882 - Describe servicing requirements of multiple automotive batteries and traction batteries (Level 3, credits 3)</p> <p>30883 - Describe charging and starting system diagnosis (Level 3, credits 3)</p> <p>30876 - Diagnose and rectify faults in vehicle or machine charging and starting systems (Level 4, credits 6)</p> <p>30877 - Service multiple automotive batteries (Level 4, credits 3)</p> <p>30878 - Service traction batteries (Level 4, credits 3)</p> <p>30873 - Carry out diagnostic procedures using an automotive scan tool (Level 4, credits 8)</p> <p>30874 - Carry out automotive diagnostic procedures using an oscilloscope (Level 4, credits 8)</p> <p>31050 - Diagnose and repair automotive driveline system faults (Level 4, credits 10)</p> <p>31052 - Diagnose and repair a Supplemental Restraint System fault (Level 4, credits 4)</p> <p>24114 - Diagnose and repair faults in automotive gauges, instruments or instrument clusters (Level 4, credits 4)</p>
<p>Outcome 4</p> <p>Install a range of electrical or electronic accessory systems.</p>	<p>31128 - Demonstrate knowledge of automotive wiring harness design and manufacture (Level 3, credits 4)</p> <p>31126 - Manufacture and install an automotive wiring harness (Level 4, credits 10)</p>

(Credits 10)	
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