

New Zealand Certificate in Automotive Engineering (Level 3)

Specialism offered: Light

MOE Code	NZ3097	Level	3	Duration	1 academic year	Version	1
Delivery	Full-time, Intramural					Intakes	Semester 1
Strategic purpose	This qualification provides the automotive industry with individuals who can service general automotive systems. The qualification is designed for people who are beginning a career in the industry. Graduates of this qualification will be able to work under limited supervision.						
Graduate profile	Graduates will be able to: <ul style="list-style-type: none"> Follow workplace policies, procedures and relevant regulations to work safely and effectively in an automotive workshop. Use tools and equipment to complete basic workshop engineering tasks. Apply fundamental automotive engineering knowledge to service engine, and driveline systems. Check operation of, and perform minor repairs on, electrical and electronic systems Apply fundamental automotive engineering knowledge to service steering, suspension and brake systems. 						
Education pathway	This qualification can lead to level 4 qualifications in automotive engineering.						
Employment pathway	Graduates of this qualification will have the skills and knowledge to work in an entry level position in the automotive industry.						
Award(s)	New Zealand Certificate in Automotive Engineering (Level 3)						
Completion requirements	120 credits, as listed in Programme Structure. <i>This programme has been accredited by NZQA. This programme may be partially assessed against NZQF standards and credits gained for the standards will be reported to NZQA.</i>						
Entry requirements	Refer to Generic Entry Requirements listed on Page 29.						
Credit recognition	Credit from Recognition of Prior Learning, Credit Transfer and Unit Standard Transfer (if applicable) will be in accordance with the policy <i>Credit Recognition (05.004)</i> .						
Time limit for completion	5 years from initial enrolment						
Note #1: Unit standards listed in this programme are correct at the time of publication, but may be subject to change as required by NZQA. Note #2: Students complete either Programme of Study #1 or Programme of Study #2. There is no option to complete courses from both programmes of study.							

Programme structure – Programme of Study #1			
Code	Title	Credits	Level
Core Compulsory courses			
3507.3001	Automotive Workshop Safety	10	3
Light Specialism courses			
3507.3002	Workshop Engineering Tools and Equipment	15	3
3507.3003	Light and Motorsport Engines and Cooling Systems	15	3
3507.3004	Automotive Engine Tuning and Fuel Systems	10	3
3507.3005	Light Automotive Brakes and Steering	25	3
3507.3006	Automotive Transmission and Driveline Systems	15	3
3507.3007	Automotive Electrical Technology	10	3
3507.3008	Automotive Electronic and HVAC Systems	20	3
Course prescriptors			
Title	Code	Credits	Level
Automotive Workshop Safety	3507.3001	10	3
Aim: Follow workplace policies, procedures and relevant regulations to work safely and effectively in an automotive workshop. <i>Students may be assessed against unit standards: 16113, 3856, and 29579</i>			
Workshop Engineering Tools and Equipment	3507.3002	15	3
Aim: Use tools and equipment to complete basic workshop engineering tasks. <i>Students may be assessed against unit standards: 21671, 21670, 21685, 21859, and 21684</i>			
Light and Motorsport Engines and Cooling Systems	3507.3003	15	3
Aim: To enable students to describe engine operation and carry out an engine overhaul and service an engine cooling system. <i>Students may be assessed against unit standards: 244, 21717, 15446, 21686, and 21680</i>			
Automotive Engine Tuning and Fuel Systems	3507.3004	10	3
Aim: To enable students to describe and diagnose engine tuning and fuel systems. <i>Students may be assessed against unit standards: 235, 240, 3400, and 243</i>			
Light Automotive Brakes and Steering	3507.3005	25	3
Aim: Apply fundamental automotive engineering knowledge to service steering, suspension and brake systems. <i>Students may be assessed against unit standards: 229, 21722, 5466, 21720, 21689, 21869, 24564, 24410, 21721, and 242</i>			
Automotive Transmissions and Driveline Systems	3507.3006	15	3
Aim: To enable students to describe the function, purpose and location of transmissions and service systems. <i>Students may be assessed against unit standards: 239, 920, 24307, 918, and 29373</i>			
Automotive Electrical Technology	3507.3007	10	3
Aim: To develop students' knowledge of electrical principles in vehicle circuits. <i>Students may be assessed against unit standards: 21676, 21675, 234, and 233</i>			
Automotive Electronic and HVAC Systems	3507.3008	20	3
Aim: To enable students to describe and service electronic circuits and demonstrate knowledge of HVAC systems. <i>Students may be assessed against unit standards: 22799, 22800, 24148, 3877, 5459, 15373, and 24090</i>			

Programme structure – Programme of Study #2			
Code	Title	Credits	Level
Core Compulsory courses			
3507.3009	Automotive Workshop Safety	10	3
3507.3010	Basic Workshop Engineering Tasks, Tools and Equipment	15	3
3507.3011	Engines	15	3
3507.3012	Engine Systems	10	3
3507.3013	Driveline Systems	10	3
3507.3014	Electrical and Electronics	15	3

3507.3015	Starting and Charging Systems	10	3
3507.3016	Electronic Controls, High Voltage Systems and HVAC	10	3
3507.3017	Brake Systems	10	3
3507.3018	Steering and Suspension Systems	15	3
Course prescriptors			
Title	Code	Credits	Level
Automotive Workshop Safety	3507.3009	10	3
Aim: Students will identify and consistently apply policies, procedures and regulations that ensure safe and effective working practices when undertaking work in an automotive workshop.			
Basic Workshop Engineering Tasks, Tools and Equipment	3507.3010	15	3
Aim: Students will use hand and power tools and workshop engineering equipment to complete basic automotive engineering workshop tasks.			
Engines	3507.3011	15	3
Aim: Students will identify the components of an engine; strip, measure and reassemble and start an engine as well as carry out tuning, including ignition systems for four stroke petrol and diesel engines.			
Engine Systems	3507.3012	10	3
Aim: Students will describe the function, purpose and location of engine systems and undertake basic servicing of engine systems.			
Driveline Systems	3507.3013	10	3
Aim: Students will describe the function, purpose and location of driveline systems and undertake basic servicing of driveline systems.			
Electrical and Electronics	3507.3014	15	3
Aim: Students will understand and identify automotive electrical and electronic principles as well as carry out basic checks and repairs on wiring and lighting systems.			
Starting and Charging Systems	3507.3015	10	3
Aim: Students will identify the function and purpose of starting and charging systems as well as use appropriate tools and processes to check the operation of starting and charging systems.			
Electronic Controls, High Voltage Systems and HVAC	3507.3016	10	3
Aim: Students will understand the function and purpose of control systems, use appropriate tools and processes to check the operation of electronic control systems as well as understand the operation and safety processes of high voltage systems.			
Brake Systems	3507.3017	10	3
Aim: Students will identify the function, purpose and location of brake systems and use appropriate tools and processes to service brake systems.			
Steering and Suspension Systems	3507.3018	15	3
Aim: Students will identify the function, purpose and location of steering and suspension systems and use appropriate tools and processes to service steering and suspension systems.			