National Certificate in Motor Industry (Motorcycle Engineering)

Level **4**

Credits **239**

This qualification has been **reviewed**. The last date to meet the requirements is 31 December 2020.

Version 5 of this qualification has been republished to extend the last date for assessment from 31 December 2016 to 31 December 2020 and to set a last date for entry as 31 December 2016.

Transition Arrangements

This qualification, the National Certificate in Motor Industry (Automotive Engineering) [Ref: 0019], National Certificate in Motor Industry (Automotive Electrical Engineering) [Ref: 0137], National Certificate in Motor Industry (Outdoor Power Equipment Servicing) [Ref: 0697], National Certificate in Motor Industry (Trailer Boat Systems Engineering) (Level 3) [Ref: 0698], and the National Certificate in Motor Industry (Trailer Boat Systems Engineering) (Level 4) [Ref: 0699] have been replaced by the National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 3) with strands in Electrical and Electronics, Light Vehicle, Motorcycle, Outdoor Power Equipment, and Trailer Boat Systems [Ref: 1421] and the National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 4) with strands in Electrical and Electronics, Light Vehicle, Motorcycle, Outdoor Power Equipment, and Trailer Boat Systems [Ref: 1422].

The last date for entry into this qualification is 31 December 2016.

People currently working towards this qualification must complete the requirements by 31 December 2020.

For detailed information see Review Summaries on the NZQA website.

NZQF National Qualification Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	October 1995	December 2002
Review	2	September 1999	December 2012
Revision	3	November 2000	December 2012
Review	4	August 2008	December 2012
Revision	5	November 2010	December 2016
Republished	5	January 2014	December 2020
Republished	5	November 2016	December 2020

Standard Setting Body

NZ Motor Industry Training Organisation (Incorporated)
PO Box 10803
The Terrace
Wellington 6143

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Other standard setting bodies whose standards are included in the qualification

NZQA
ServiceIQ

National Certificate in Motor Industry (Motorcycle Engineering)

Level **4**

Credits **239**

Purpose

This certificate is designed as the national qualification for people working in the Motorcycle Engineering branch of the Motor Industry. This qualification recognises the knowledge and skills required to carry out all tasks required in motorcycle engineering from preparing a machine for delivery to a customer, costing jobs, to diagnosing and repairing mechanical, electrical and electronic faults. The certificate is designed for people wishing to work in a safe and professional manner; to maintain standards for the motorcycle engineering industry; and to provide a means of recognising prior learning for those already working in the industry.

Details regarding industry recognition and industry registration can be obtained from the NZ Motor Industry Training Organisation in the first instance.

Standards in this qualification have relevance to other automotive engineering qualifications, and those people who wish to consider additional standards or qualifications should contact the NZ Motor Industry Training Organisation for advice.

Replacement Information

This qualification, the National Certificate in Motor Industry (Automotive Engineering) [Ref: 0019], National Certificate in Motor Industry (Automotive Electrical Engineering) [Ref: 0137], National Certificate in Motor Industry (Outdoor Power Equipment Servicing) [Ref: 0697], National Certificate in Motor Industry (Trailer Boat Systems Engineering) (Level 3) [Ref: 0698], and the National Certificate in Motor Industry (Trailer Boat Systems Engineering) (Level 4) [Ref: 0699] have been replaced by the National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 3) with strands in Electrical and Electronics, Light Vehicle, Motorcycle, Outdoor Power Equipment, and Trailer Boat Systems [Ref: 1421] and the National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 4) with strands in Electrical and Electronics, Light Vehicle, Motorcycle, Outdoor Power Equipment, and Trailer Boat Systems [Ref: 1422].

Special Notes

It is expected that most people will undertake training towards this qualification in the form of apprenticeship with the use of record of achievement books and training manuals. It is recommended that in the first instance, a “training plan” be developed with the assistance of a NZ Motor Industry Training Organisation representative.

Applications for recognition of prior learning should be made to the NZ Motor Industry Training Organisation or accredited training providers. Credits are not automatic and normally an assessment of ability is required.

Credit Range

	Compulsory	Elective
Level 1 credits	4	0-2
Level 2 credits	75	-
Level 3 credits	66	0-24
Level 4 credits	70	0-16
Level 5 credits	-	0-13
Minimum credits	215	24

Requirements for Award of Qualification

Award of NZQF National Qualifications

Credit gained for a standard may be used only once to meet the requirements of this qualification.

Unit standards and achievement standards that are equivalent in outcome are mutually exclusive for the purpose of award. The table of mutually exclusive standards is provided on the New Zealand Qualifications Authority (NZQA) website: http://www.nzqa.govt.nz/qualifications-standards/standards/standards-exclusion-list/.

Reviewed standards that continue to recognise the same overall outcome are registered as new versions and retain their identification number (ID). Any version of a standard with the same ID may be used to meet qualification requirements that list the ID and/or that specify the past or current classification of the standard.

Summary of Requirements

- Compulsory standards
- Elective – A minimum of 24 credits as specified

Detailed Requirements

Compulsory

The following standards are required

Engineering and Technology > Motor Industry > Automotive Administration

ID	Title	Level	Credit
248	Describe an apprenticeship employment contract for the automotive industry	2	1
249	Carry out automotive industry personal workplace requirements	2	5
392	Maintain automotive stock and plant security	2	2
934	Cost a job for an automotive repair or service	4	3

ID	Title	Level	Credit
946	Book in work for an automotive business	4	4
968	Estimate the cost of an automotive repair	4	4

Engineering and Technology > Motor Industry > Automotive Electrical and Electronics

ID	Title	Level	Credit
232	Test an automotive electrical circuit	2	8
233	Service an automotive battery	2	2
234	Describe automotive starting and charging systems and their operation	2	4
235	Describe automotive ignition systems and their operation	2	3
877	Identify functions of automotive lighting systems, rectify lighting faults, and adjust vehicle lamps	3	5
890	Diagnose and repair faults in electrical starting and charging systems on motorcycles	4	4
898	Identify an automotive wiring diagram and translate information to a motor vehicle circuit	3	3
899	Carry out automotive wiring repairs and test circuits for serviceability	3	3
909	Install, repair, and replace electrical accessories in vehicles	3	2
979	Diagnose and rectify faults in an engine flywheel ignition system	4	5
15376	Diagnose and repair faults in electronically controlled systems used on motorcycles	4	5
15377	Test, diagnose, and rectify faults in a motorcycle electronic ignition system	4	6
15378	Test and rectify faults in a motorcycle contact breaker battery ignition system	3	4

Engineering and Technology > Motor Industry > Automotive Fuel Systems and Exhaust

ID	Title	Level	Credit
240	Demonstrate knowledge of petrol fuel systems	2	3
892	Test, diagnose, and rectify faults in an electronic fuel injection (EFI) system on an engine	4	4
933	Diagnose and rectify exhaust system faults	3	2
962	Diagnose and rectify faults in a motorcycle fuel system	4	4

Engineering and Technology > Motor Industry > Automotive Preventative Maintenance

ID	Title	Level	Credit
229	Identify the functions and general locations of motor vehicle systems and components	2	5
237	Describe automotive brake, steering, and suspension systems, and their operation	2	3
245	Select and apply lubricants and sealants for automotive and related industry applications	2	2
944	Carry out a pre-delivery service and rectify defects on a motorcycle	3	4
956	Inspect motorcycles for Warrant of Fitness requirements	4	2

Engineering and Technology > Motor Industry > Automotive Sales

ID	Title	Level	Credit
380	Carry out an appraisal of a vehicle	3	4

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
926	Demonstrate knowledge of and rectify faults in a motorcycle clutch	3	3
927	Demonstrate knowledge of, test, and overhaul a motorcycle transmission	3	5
939	Diagnose and rectify motorcycle final drive faults	3	5

Engineering and Technology > Motor Industry > Automotive Workshop Engineering

ID	Title	Level	Credit
226	Perform safe working practices in an automotive workshop	2	2
227	Carry out general engineering tasks to repair and make automotive components	2	4
228	Select and use hand tools and workshop equipment for an automotive application	2	5
230	Repair and manufacture automotive components by oxy-acetylene gas welding	2	3
913	Use the oxy-acetylene process for welding and allied uses in the motor industry	3	4
924	Clean automotive components and maintain cleaning equipment	2	1
3381	Assess and repair damaged motorcycles	4	6

Engineering and Technology > Motor Industry > Engine Repairs

ID	Title	Level	Credit

ID	Title	Level	Credit
231	Explain the operation of two and four stroke petrol and diesel engines	2	4
236	Service automotive cooling systems	2	4
243	Carry out basic tuning on a four stroke petrol engine	2	4
244	Disassemble and assemble a four stroke engine	2	6
879	Test a two stroke petrol engine to determine its condition	4	4
928	Demonstrate knowledge of, and repair a manual starting system on a small engine	2	2
3400	Check a four stroke petrol engine for condition using hand held test equipment	3	4
15442	Carry out repairs to a motorcycle cylinder head	4	6
15443	Demonstrate knowledge of, test, and repair a motorcycle engine cooling system	3	5
15444	Repair a motorcycle engine crankshaft assembly	4	4
15445	Repair a motorcycle engine piston and cylinder assembly	3	5

Engineering and Technology > Motor Industry > Tyres

ID	Title	Level	Credit
15472	Repair punctures and fit tyres to motorcycle wheels	3	3

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
973	Diagnose and rectify brake system faults on a motorcycle	4	3

Engineering and Technology > Motor Industry > Vehicle Recovery

ID	Title	Level	Credit
3387	Respond to vehicle breakdown	3	1

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
2311	Describe, diagnose, and rectify faults in motorcycle frames, suspension, and steering systems	4	6
2327	Demonstrate knowledge of motorcycle wheel assemblies, and repair them	3	4

Service Sector > Service Sector Skills > Selling Skills

ID	Title	Level	Credit
58	Complete a sales transaction in a given situation	1	2

Service Sector > Service Sector Skills > Service Sector - Core Skills

ID	Title	Level	Credit
56	Attend to customer enquiries face-to-face and on the telephone	1	2
57	Provide customer service in given situations	2	2

Elective
A minimum of 24 credits

Engineering and Technology > Motor Industry > Automotive Administration

ID	Title	Level	Credit
225	Identify the occupational areas and structure of the New Zealand Automotive Industry	1	2
382	Demonstrate knowledge of payment types, and carry out office procedures in an automotive company	3	4
386	Determine stock levels of automotive products	5	4
391	Prepare a quotation for the supply of an automotive product, repair, or service	3	3
398	Interpret warranties and guarantees that apply to the automotive industry	4	2

Engineering and Technology > Motor Industry > Automotive Electrical and Electronics

ID	Title	Level	Credit
8187	Describe electronic components and circuitry for automotive engineering requirements	3	8

Engineering and Technology > Motor Industry > Automotive Fuel Systems and Exhaust

ID	Title	Level	Credit
15383	Recondition an automotive turbocharger	4	5

Engineering and Technology > Motor Industry > Automotive Plastic Repair

ID	Title	Level	Credit
876	Repair plastic automotive components	3	7

Engineering and Technology > Motor Industry > Automotive Preventative Maintenance

ID	Title	Level	Credit
977	Demonstrate knowledge of automotive component corrosion prevention requirements	5	5

Engineering and Technology > Motor Industry > Automotive Sales

ID	Title	Level	Credit
383	Demonstrate knowledge of purchasing automotive parts for resale and storing parts	3	3
385	Sell automotive products	3	4
11745	Demonstrate knowledge of and sell automotive service	3	4

Engineering and Technology > Motor Industry > Automotive Workshop Engineering

ID	Title	Level	Credit
914	Metal-arc gas shield (MIG) weld automotive components	3	4
950	Manual metal arc weld automotive components in flat and vertical positions	3	6

Engineering and Technology > Motor Industry > Engine Repairs

ID	Title	Level	Credit
886	Test a four stroke petrol engine using a tunescope	4	2
967	Measure and interpret engine performance	4	4
980	Service engine driven stationary and mobile generators and power units, and repair control systems	4	3

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
15474	Demonstrate knowledge of, diagnose, and rectify faults in a motorcycle anti-lock braking system	5	4

Transition Arrangements

Version 5

Version 5 of this qualification was issued to extend the expiry date, and subsequently republished to include reverse transition arrangements for expired standard 15383.

Version 5 of this qualification contains a standard that expired in December 2003. For the purposes of this qualification, people who have gained credit for the replacement standard are exempt from the requirement to gain credit for the expired standard – see table below.

Credit for	Exempt from
24233	15383

This qualification contains standards that replace an earlier standard. For the purposes of this qualification, people who have gained credit for the expired standard are exempt from the requirement to gain credit for the replacement standards – see table below.

Credit for	Exempt from
2349	15444, 15445

For detailed information see Review Summaries on the NZQA website.

Previous versions of the qualification

Version 4 was issued to indicate that this qualification is expiring.

This qualification, the National Certificate in Motor Industry (Automotive Engineering) [Ref: 0019], National Certificate in Motor Industry (Automotive Electrical Engineering) [Ref: 0137], National Certificate in Motor Industry (Outdoor Power Equipment Servicing) [Ref: 0697], National Certificate in Motor Industry (Trailer Boat Systems Engineering) (Level 3) [Ref: 0698], and the National Certificate in Motor Industry (Trailer Boat Systems Engineering) (Level 4) [Ref: 0699] have been replaced by the National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 3) with strands in Electrical and Electronics, Light Vehicle, Motorcycle, Outdoor Power Equipment, and Trailer Boat Systems [Ref: 1421] and the National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 4) with strands in Electrical and Electronics, Light Vehicle, Motorcycle, Outdoor Power Equipment, and Trailer Boat Systems [Ref: 1422].

Version 3 was issued in order to extend the last date for the award of version 1 to December 2002. The content of the qualification was not changed.

Version 2 was issued as part of the Motor Industry unit standard review.

Changes to structure and content

- removal of prerequisite qualification the National Certificate in Motor Industry (Entry to Automotive Trades) [Ref: 0017];
- standards 56, 57, 58, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 240, 243, 244, 245, 248, 249, 380, 928, 3400, 15376, 15377, 15378, 15442, 15443, and 15472 added to the compulsory section. Many of these standards were previously covered by being included in the prerequisite qualification;
- standards 878, 891, 895, 897, 900, 916 and 923 have been removed from the compulsory section following changes to industry technology requirements;
- the structure has been amended to provide for an elective section;
- standards 886 and 977 moved from the compulsory section to the elective section;
- expiring standard 2349 replaced by 15444 and 15445;
- total credits for the qualification increased from 124 to 239.

Version 1 replaced the Trade Certificate in Motorcycle Engineering with the National Certificate in Motor Industry (Motorcycle Engineering). The Trade Certificate continues to be recognised by the NZQA, the NZ Motor Industry Training Organisation, and the motor industry. There is no requirement for holders of that qualification to seek a national certificate.

Certification

This certificate will display the logos of NZQA, the NZ Motor Industry Training Organisation (Incorporated), and the organisation that has been granted consent to assess against standards that meet the requirements of the qualification (accredited).

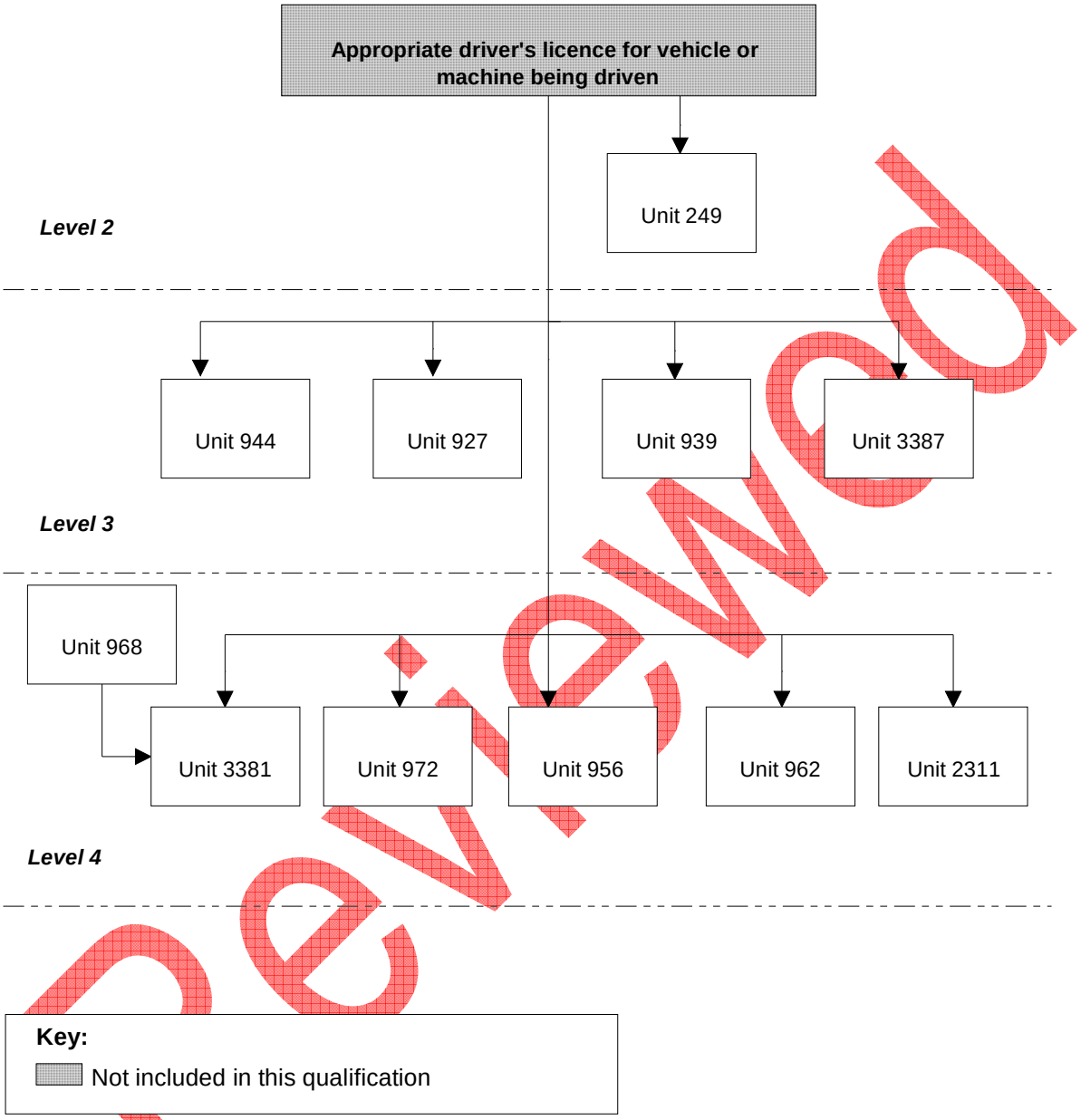
Classification

This qualification is classified according to the classification system listed on the Directory of Assessment Standards (DAS) and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

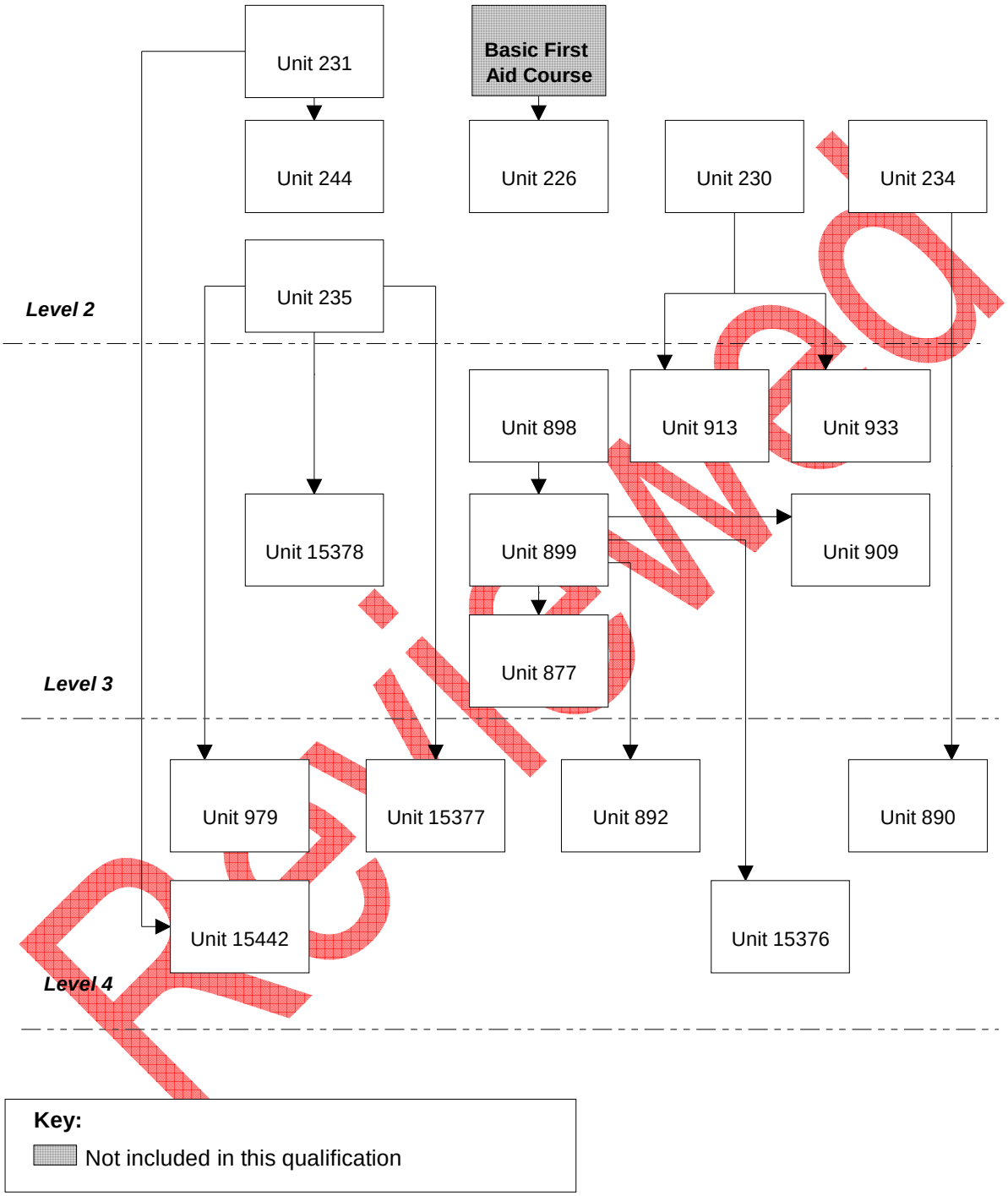
DAS Classification		**NZSCED**	
Code	**Description**	**Code**	**Description**
257	Engineering and Technology > Motor Industry	030503	Engineering and Related Technologies > Automotive Engineering and Technology > Vehicle Mechanics

Quality Management Systems
Providers and Industry Training Organisations must be granted consent to assess by a recognised Quality Assurance Body before they can register credits from assessment against standards. Organisation with consent to assess and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Consent to assess requirements and the moderation system are outlined in the associated Consent and Moderation Requirements (CMR) for each standard.

Prerequisite diagram for the compulsory unit standards



Prerequisite diagram for the compulsory unit standards (continued)



Prerequisite diagram for the elective unit standards