

National Certificate in Motor Industry (Automotive Engineering)

Level	4
Credits	271

This qualification has been **reviewed**. The last date to meet the requirements is 31 December 2017.

Purpose

This certificate is designed as the national qualification for those persons working in the Automotive Engineering sector of the Motor Industry. Holders of this qualification are able to inspect vehicles for mechanical, electrical and electronic faults; and diagnose and rectify faults in mechanical, electrical and electronic components on vehicles. The certificate is designed for those wishing to work in a safe and professional manner; to maintain standards in the automotive engineering industry; to provide a means of recognising prior learning for those already working in the industry.

This certificate is now linked to exit points for industry recognition purposes, where apprentices may on application receive NZ Motor Industry Training Organisation (MITO) certificates for credits achieved. Details regarding industry recognition, industry registration, and entry and exit points for the apprenticeship can be obtained from MITO 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 MITO for advice.

Replacement Information

This qualification, the National Certificate in Motor Industry (Motorcycle Engineering) [Ref: 0015], 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0698], and the National Certificate in Motor Industry (Trailer Boat Systems Engineering) (Level 4) [Ref: 0699] have been replaced by the National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 3) with strands in Electrical and Electronics, Light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	2	0-15
Level 2 credits	75	0-45
Level 3 credits	93	0-59
Level 4 credits	42	0-59
Minimum credits	212	59

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 59 credits as specified

Detailed Requirements

Compulsory

The following standards are required

Engineering and Technology > Motor Industry > Automotive Administration

ID	Title	Level	Credit
249	Carry out automotive industry personal workplace requirements	2	5

Engineering and Technology > Motor Industry > Automotive Air Conditioning

ID	Title	Level	Credit
15373	Demonstrate knowledge of automotive air conditioning	3	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
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
961	Diagnose and rectify faults in engine management systems	4	8
3877	Demonstrate knowledge of protecting vehicle electronics in the motor industry	2	2
5462	Explain the operation of automotive electronic ignition systems	4	5
5463	Explain the operation and repair requirements of automotive electronic control systems	4	8
8182	Diagnose and rectify faults in automotive electronically controlled systems	4	6
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
240	Demonstrate knowledge of petrol fuel systems	2	3
241	Describe the operation of a diesel fuel system and perform minor servicing tasks	2	3
892	Test, diagnose, and rectify faults in an electronic fuel injection (EFI) system on an engine	4	4
5459	Explain the operation of automotive electronic fuel injection systems	3	4
8183	Explain the operation, service checks, fault diagnosis, and repair of carburettors	3	8
11738	Replace exhaust system components	2	3

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
15406	Carry out a periodic maintenance check and service on cars and light commercial vehicles	3	2

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
239	Demonstrate knowledge of automotive manual transmissions	2	2
918	Describe the operation of final drive assemblies on cars and light commercial vehicles	3	4
919	Describe the operation of an automatic transmission used on cars and light commercial vehicles	3	8
920	Describe the operation of a manual transmission used on cars and light commercial vehicles	3	4
921	Describe driveline components and rectify driveline faults on cars or light commercial vehicles	3	4
922	Rectify faults in clutches used on cars or light commercial vehicles	3	2
935	Service an automatic transmission or transaxle assembly	3	2

Engineering and Technology > Motor Industry > Automotive Workshop Engineering

ID	Title	Level	Credit
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
924	Clean automotive components and maintain cleaning equipment	2	1
16113	Demonstrate knowledge of safe working practices in an automotive workshop	2	2

Engineering and Technology > Motor Industry > Engine Repairs

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

ID	Title	Level	Credit
878	Repair an engine cooling system	3	4
893	Diagnose and rectify vehicle emission control system faults	4	3
3400	Check a four stroke petrol engine for condition using hand held test equipment	3	4
5461	Explain the operation and testing of automotive emission controls	3	4
15446	Remove and replace a car or light commercial vehicle engine cambelt	3	3

Engineering and Technology > Motor Industry > Vehicle Bodywork

ID	Title	Level	Credit
912	Remove, repair, and replace vehicle body interior components	3	3
2629	Demonstrate knowledge of, and work in proximity to, motor vehicle air bag mechanisms	3	2

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
242	Change the fluid and bleed a brake hydraulic system	2	2
938	Inspect and overhaul braking system hydraulic componentry off the vehicle	3	4
960	Diagnose and rectify brake system faults on cars or light commercial vehicles	4	4
5466	Remove and replace car and/or light commercial vehicle brake pads and shoes	3	2
8184	Explain the operation and servicing requirements of car and light commercial vehicle braking systems	3	6

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
896	Diagnose and rectify suspension and manual steering faults on cars or light commercial vehicles	4	4

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

Elective

A minimum of 59 credits

Field	Subfield	Domain
Engineering and Technology	Motor Industry	Any

Transition Arrangements**Version 6**

Version 6 was issued to extend the expiry date of this qualification.

For detailed information see [Review Summaries](#) on the NZQA website.

Previous versions of the qualification

Version 5 was issued to indicate that this qualification is expiring.

This qualification, the National Certificate in Motor Industry (Motorcycle Engineering) [Ref: 0015], 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 4 was issued in order to extend the last date for the award of versions 1 and 2 to December 2002. The content of the qualification was not changed.

Version 3 was issued to take into account the review of Motor Industry standards.

Changes to structure and content

- credits total increased from 194 to 271;
- removal of prerequisite qualification the National Certificate in Motor Industry (Entry to Automotive Trades) [Ref: 0017];
- addition of standards 56, 227, 228, 229, 231, 232, 233, 234, 235, 236, 237, 239, 240, 241, 242, 243, 244, 249, 961, 3877, 5462, 5466, 11738, 15373, 15406, 15446, and 16113 to the compulsory section. Many of these unit standards were previously covered by being included in the prerequisite qualification;

- removal of standards 392, 398, 882, 883, 891, 894, 895, 897, 902, 913, 923, 925, 933, 934, 943, 946, 955, 958, 959, and 968 from the compulsory section. People holding credit for those standards may choose to complete either versions 1 or 2 within the period of transition, or use the credit to meet the elective requirements of version 3;
- elective section has been expanded to include all standards within the Motor Industry sub-field.

Some standards specified in this qualification are considered similar in nature to other MITO standards. MITO recommends that people holding credit for those standards should apply for recognition of prior learning (RPL) as indicated in the table below.

Credit already held for	Apply for RPL for
933	11738
881	15373
226	16113

Version 2 was issued following an earlier review of the Motor Industry unit standards. The transition specified October 2000 as the last date for the award of version 1. People who transferred from version 1 to version 2 and held credit for unit standard 900 were given an exemption for unit standards 5463 and 8182.

Version 1 replaced the Trade Certificate in Automotive Engineering with the National Certificate in Motor Industry (Automotive 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.

NZQF National Qualification Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	February 1996	December 2002
Review	2	June 1998	December 2002
Review	3	April 1999	December 2012
Revision	4	November 2000	December 2012
Review	5	August 2008	December 2012
Revision	6	November 2010	December 2017

Standard Setting Body

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

Telephone 0800 88 21 21
 Facsimile 04 494 0006
 Email info@mito.org.nz

Other standard setting bodies whose standards are included in the qualification

NZQA

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. Accredited providers and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Accreditation requirements and the moderation system are outlined in the associated Accreditation and Moderation Action Plan (AMAP) for each standard.

Prerequisite Diagram

