

National Certificate in Motor Industry (Advanced Technical) (Level 5) with strands in Automotive Electrical and Mechanical, and Collision Repair

Level 5

Credits 44

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

Transition Arrangements

This qualification has been reviewed without replacement.

The last date for entry into training programmes or courses leading to this qualification is 31 December 2019.

The last date to meet the requirements of this qualification will be 31 December 2020 when the qualification will be discontinued. From that date no results can be reported against the qualification.

It is anticipated that no existing candidates will be disadvantaged by these transition arrangements. However, anyone who feels that they have been disadvantaged may appeal to MITO at the address below. Appeals will be considered on a case by case basis.

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

This qualification contains standards that are expiring and that have been replaced by other standards. For the purposes of this qualification, people who have gained credit for the replacement standards are exempt from the requirement to gain credit for the expiring standards – see table below.

| Credit for | Exempt from |
|--------------|-------------|
| 24115, 24116 | 979 |
| 24131, 24134 | 15375 |
| 24278, 24280 | 15449 |

This qualification contains a standard that replaces earlier standards. For the purposes of this qualification people who have gained credit for the expiring standards are exempt from the requirement to gain credit for the replacement standard.

| Credit for | Exempt from |
|------------|-------------|
| 5737, 5779 | 21084 |

NZQF National Qualification Registration Information

| Process | Version | Date | Last Date for Assessment |
|--------------|---------|---------------|--------------------------|
| Registration | 1 | February 2005 | December 2020 |
| Republished | 1 | January 2014 | December 2020 |
| Review | 2 | May 2017 | December 2020 |

Standard Setting Body

MITO New Zealand Incorporated
 PO Box 10803
 Wellington 6143

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Reviewed

National Certificate in Motor Industry (Advanced Technical) (Level 5) with strands in Automotive Electrical and Mechanical, and Collision Repair

Level 5

Credits 44-47

Purpose

The National Certificate in Motor Industry (Advanced Technical) with strands in Automotive Electrical and Mechanical, and Collision Repair is aimed at people working, or wishing to work, in an advanced technical role within an automotive or collision repair business. It is designed to provide people with leading-edge skills that reflect the latest industry developments and is in response to industry demand for nationally recognised higher level qualifications.

The qualification comprises core compulsory and core elective sections and strands offering candidates the opportunity to specialise in their chosen field. It aims to equip technicians with skills such as adapting to new technologies, servicing and repairing complex systems, carrying out failure analysis, understanding hybrid vehicle technology, diagnosing faults with multiplex circuits, and interpreting body and paint specifications using computers and digital imaging.

It is intended that this qualification will help create long-term career opportunities in the motor industry and provide advanced skills required for increasingly sophisticated automotive technologies. This qualification leads on from any Level 4 National Certificate in Motor Industry in the mechanical, electrical, and body occupations, or from the NZ Trade Certificate, NZ Advanced Trade Certificate, or National 'A' Grade Registration in Motor Industry. It can provide a career pathway to higher level technical, business, or management qualifications within the motor and related industries.

Special Notes

Existing holders of MITO National Registration, MITO National 'A' Grade Registration, a Motor Industry Trade Certificate, or a level 4 National Certificate in Motor Industry may wish to consider this qualification.

All candidates must hold a level 4 National Certificate in Motor Industry or a NZ Motor Industry Trade Certificate as listed in Appendix 2, or equivalent, before they can apply for award of this qualification. The prerequisite qualification must be verified by MITO before results will be sent to NZQA for processing.

Candidates who wish to have their overseas qualifications assessed can apply to:
 Qualification Recognition Services
 New Zealand Qualifications Authority
 PO Box 160,
 WELLINGTON
 Telephone 04 802 3000
 Website <http://www.nzqa.govt.nz/for-international/qual-eval/index.html>

Application for the recognition of current competency should be made to the NZ Motor Industry Training Organisation or an accredited training provider. Credits are not automatic and an assessment of ability is required.

Credit Range

| | Core Compulsory | Core Elective |
|-----------------|-----------------|---------------|
| Level 5 credits | 20 | 4-7 |
| Minimum totals | 20 | 4-7 |

| | Automotive Electrical and Mechanical strand Elective | Collision Repair strand Elective |
|-----------------|--|----------------------------------|
| Level 4 credits | 0-4 | 0-4 |
| Level 5 credits | 16-20 | 16-20 |
| Minimum totals | 20 | 20 |

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.

All candidates must hold a level 4 National Certificate in Motor Industry or NZ Motor Industry Trade Certificate or Advanced Trade Certificate as listed in Appendix 2, or equivalent (refer to Special Notes).

Summary of Requirements

- Core Compulsory standards
- Core Elective - A minimum of 1 standard as specified

One of the following strands is required

- Automotive Electrical and Mechanical Strand
- Collision Repair Strand

Detailed Qualification Requirements

Core Compulsory

The following standards are required

Engineering and Technology > Motor Industry > Automotive Administration

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 5783 | Identify, interpret, and apply legal requirements relevant to the workplace in the motor industry | 5 | 8 |
| 15367 | Demonstrate knowledge of, and apply, automotive workplace efficiency and productivity concepts | 5 | 4 |
| 21079 | Inspect technical quality of work in the motor and related industries | 5 | 4 |
| 21080 | Provide technical guidance in the motor and related industries | 5 | 4 |

Core Elective

A minimum of 1 standard

Engineering and Technology > Motor Industry > Automotive Administration

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 977 | Demonstrate knowledge of, and recommend, automotive component corrosion prevention requirements | 5 | 7 |
| 21081 | Adapt work processes to new technology in the motor and related industries | 5 | 4 |
| 21082 | Service and repair complex automotive systems | 5 | 4 |

Engineering and Technology > Motor Industry > Automotive Workshop Engineering

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 10102 | Investigate and supervise the rectification of an automotive mechanical and/or bodywork problem | 5 | 4 |

Automotive Electrical and Mechanical Strand

A minimum of 20 credits

∞ Of which a minimum of 16 credits at Level 5

Engineering and Technology > Motor Industry > Automotive Administration

| ID | Title | Level | Credit |
|-------|--|-------|--------|
| 21083 | Demonstrate knowledge of, and carry out, automotive failure analysis on systems and components | 5 | 6 |

Engineering and Technology > Motor Industry > Automotive Electrical and Electronics

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 966 | Make up and install electronic circuitry to suit specific applications and components | 5 | 5 |
| 979 | Diagnose and rectify faults in an engine flywheel ignition system | 4 | 5 |
| 15375 | Diagnose and repair faults in electronically controlled systems used on heavy vehicles and machines | 4 | 8 |
| 21089 | Demonstrate knowledge of hybrid electric vehicle (HEV) technology, and service requirements | 5 | 6 |
| 21090 | Demonstrate knowledge of automotive multiplex and databus applications, and diagnose faults | 5 | 6 |
| 21091 | Demonstrate knowledge of in-vehicle information and control systems | 5 | 6 |
| 21092 | Demonstrate knowledge of, and interpret, complex automotive wiring diagrams and circuitry | 5 | 6 |
| 21093 | Demonstrate knowledge of, and use, portable computer diagnostic equipment to test vehicle systems | 5 | 4 |

Engineering and Technology > Motor Industry > Automotive Hydraulics

| ID | Title | Level | Credit |
|-------|--|-------|--------|
| 21095 | Demonstrate knowledge of, and interpret, complex automotive hydraulic diagrams and circuitry | 5 | 6 |

Engineering and Technology > Motor Industry > Automotive Pneumatics

| ID | Title | Level | Credit |
|-------|--|-------|--------|
| 21096 | Demonstrate knowledge of, and interpret, complex automotive pneumatic diagrams and circuitry | 5 | 6 |

Engineering and Technology > Motor Industry > Automotive Transmission Systems

| ID | Title | Level | Credit |
|------|--|-------|--------|
| 2321 | Diagnose and rectify faults in heavy vehicle or equipment automatic or power shift transmissions | 4 | 8 |

Engineering and Technology > Motor Industry > Engine Repairs

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 11731 | Analyse engine and components for mechanical failure and/or potential failure | 5 | 6 |

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 15449 | Test a diesel engine on a dynamometer and determine engine condition using test results | 4 | 4 |

Engineering and Technology > Motor Industry > Vehicle Braking Systems

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 974 | Diagnose and rectify faults in a car or light commercial vehicle anti-lock braking system (ABS) | 5 | 4 |
| 15474 | Demonstrate knowledge of, diagnose, and rectify faults in a motorcycle anti-lock braking system | 5 | 4 |
| 21101 | Check and rectify faults on air-braked heavy vehicle anti-lock braking and traction control systems | 5 | 4 |

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 21104 | Demonstrate knowledge of fine tuning motorcycle steering, suspension, and frame | 5 | 4 |

Collision Repair Strand

A minimum of 20 credits

Of which a minimum of 16 credits at Level 5

Engineering and Technology > Motor Industry > Automotive Administration

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 5784 | Describe factors in determining, and draw a workplace layout in the motor body industry | 5 | 4 |
| 21084 | Assess vehicle panel and/or paint damage, and prepare an estimate and/or quotation | 5 | 4 |
| 21085 | Interpret vehicle body and/or refinishing specifications using computer and digital imaging systems | 5 | 4 |
| 21086 | Analyse and interpret legal requirements relating to vehicle collision repair | 5 | 6 |
| 21087 | Demonstrate knowledge of vehicle insurance requirements, law, and liabilities | 5 | 4 |
| 21088 | Identify environmental impacts and requirements for end-of-life vehicles and/or components | 5 | 4 |

Engineering and Technology > Motor Industry > Automotive Electrical and Electronics

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 21094 | Describe removal and installation of body components in terms of electronic integrity of vehicles | 5 | 2 |

Engineering and Technology > Motor Industry > Panelbeating

| ID | Title | Level | Credit |
|------|--|-------|--------|
| 5770 | Identify and work on damaged motor vehicles with anti-lock braking systems (ABS) | 4 | 5 |

Engineering and Technology > Motor Industry > Vehicle Bodywork211

| ID | Title | Level | Credit |
|-------|--|-------|--------|
| 21097 | Demonstrate knowledge of vehicle body and structural design principles | 5 | 6 |
| 21098 | Describe aluminium alloy vehicle body and structural components, and determine repair requirements | 5 | 4 |
| 21099 | Determine the effects and report on complex damage to vehicle body systems and structure | 5 | 6 |

Engineering and Technology > Motor Industry > Vehicle Spraypainting

| ID | Title | Level | Credit |
|-------|---|-------|--------|
| 21102 | Demonstrate knowledge of vehicle paint technology | 5 | 4 |
| 21103 | Determine a paint maintenance programme for customers | 5 | 1 |

Transition Arrangements

Version 1 of this qualification was republished to include reverse transition arrangements for expiring standards 979, 5731, 15375, and 15449.

This qualification replaces the MITO (NZ Motor Industry Training Organisation) National 'A' Grade Registration qualifications listed below:

- 9102 MITO National 'A' Grade Registration Automotive Electrical Engineering
- 9104 MITO National 'A' Grade Registration Automotive Engineering
- 9106 MITO National 'A' Grade Registration Automotive Heavy Engineering
- 9108 MITO National 'A' Grade Registration Automotive Machining
- 9113 MITO National 'A' Grade Registration Automotive Refinishing
- 9115 MITO National 'A' Grade Registration Motor Cycle Engineering
- 9119 MITO National 'A' Grade Registration Panelbeating

People currently working towards MITO National 'A' Grade Registration programmes may either complete their requirements to be eligible for the issue of a MITO National 'A' Grade Registration Certificate within the timeframes listed below or transfer to this qualification, or a business and management qualification. People who do not pass the National 'A' Grade Registration examination should transfer to this qualification or to a business or management qualification. People seeking to transfer should see Appendix 1 for the unit standards that may be used towards a new qualification.

| Process | Cut-off Date | Administered by |
|---|------------------|-----------------|
| MITO National 'A' Grade Registration examinations | 1 October 2004 | NZQA |
| MITO National 'A' Grade Registration examinations for candidates who wish to resit only | 1 October 2005 | MITO |
| Complete unit standard requirements for MITO National 'A' Grade Registration | 31 December 2010 | MITO |
| Issue of MITO National 'A' Grade Registration Certificates and pocket registration cards | 31 December 2010 | MITO |

For detailed information see [Review Summaries](#) on the NZQA website, or contact the Motor Industry Training Organisation, PO Box 10803, Wellington. Free-phone 0800 882121, or visit the website www.mito.org.nz.

This qualification contains standards that will expire in December 2016. For the purposes of this qualification, people who have gained credit for the replacement standards are exempt from the requirement to gain credit for the expiring standards – see table below.

| Credit for | Exempt from |
|--------------|-------------|
| 24018, 24019 | 5731 |
| 24115, 24116 | 979 |
| 24131, 24134 | 15375 |
| 24278, 24280 | 15449 |

This qualification contains a standard that replaces earlier standards. For the purposes of this qualification people who have gained credit for the expiring standards are exempt from the requirement to gain credit for the replacement standard.

| Credit for | Exempt from |
|------------|-------------|
| 5737, 5779 | 21084 |

All MITO National 'A' Grade Registration course providers have been informed of the transition arrangements.

People affected by these transition arrangements are advised to contact MITO for advice (see contact details below).

MITO National 'A' Grade Registration and Advanced Trade Certificate will continue to be recognised by the NZ Motor Industry Training Organisation, and the motor industry.

Other standard setting bodies whose standards are included in the qualification

None.

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.

Classification

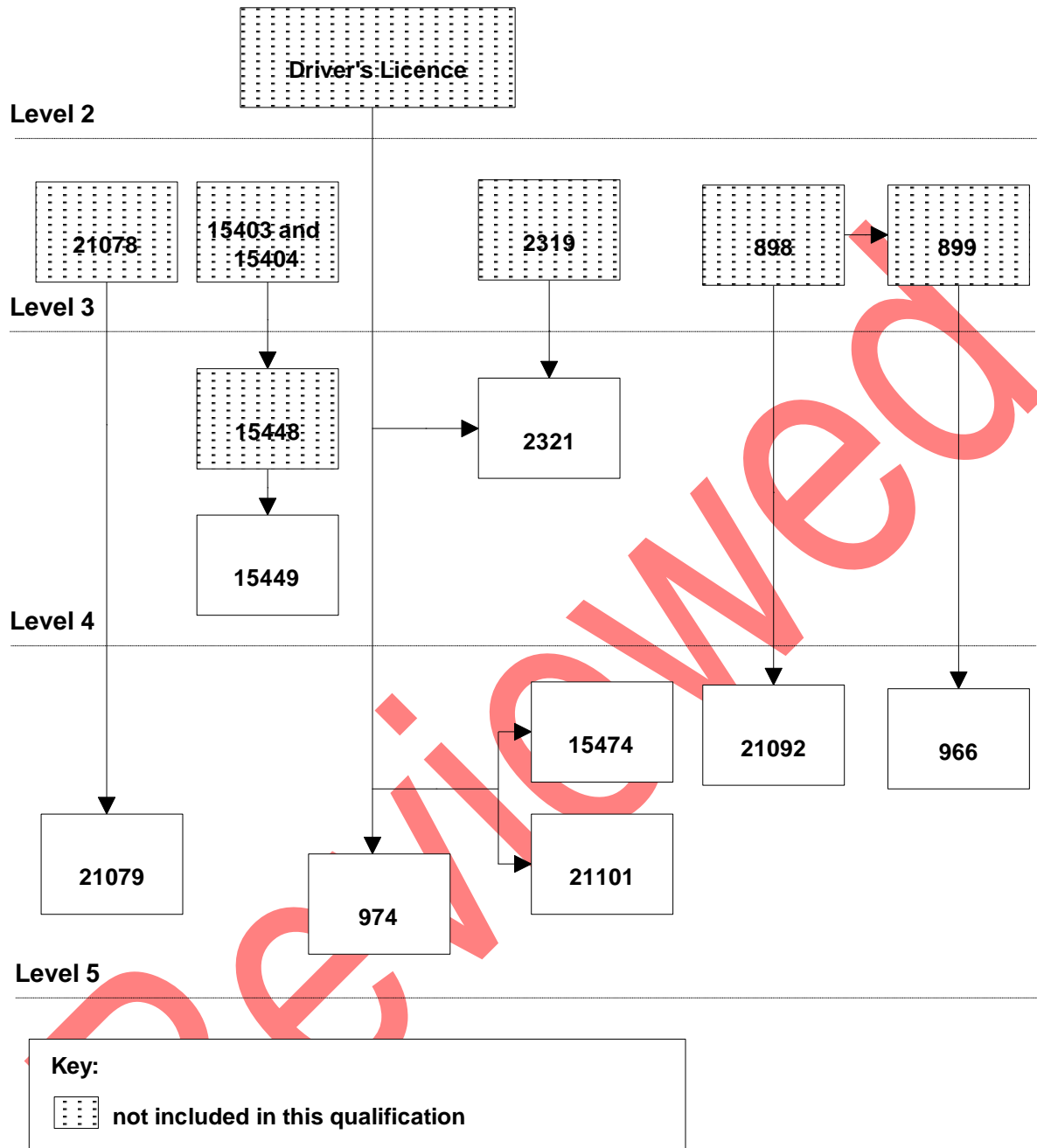
This qualification is classified according to the classification system listed on the Directory of Assessment Standards (DAS) and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

| DAS Classification | | NZSCED | |
|--------------------|---|--------|---|
| Code | Description | Code | Description |
| 257 | Engineering and Technology/Motor Industry | 030599 | Engineering and Related Technologies/Automotive Engineering and Technology/Automotive Engineering and Technology not elsewhere classified |

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



Appendix 1

Standards included in MITO National ‘A’ Grade Registrations, this national certificate, and business and management national certificates and diplomas¹:

| Motor Industry Registration | Standards included in this certificate | Standards that may be used to meet the requirements of business and management national certificates and diplomas¹ |
|---|---|--|
| 9102 MITO National ‘A’ Grade Registration Automotive Electrical Engineering | 966, 974, 979, 15367, 15375 | 8074, 15367, 15370 |
| 9104 MITO National ‘A’ Grade Registration Automotive Engineering | 974, 15367 | 8074, 15367, 15370 |
| 9106 MITO National ‘A’ Grade Registration Automotive Heavy Engineering | 11731, 15367, 15449 | 8074, 15367, 15370 |
| 9108 MITO National ‘A’ Grade Registration Automotive Machining | 977 | 8074 |
| 9113 MITO National ‘A’ Grade Registration Automotive Refinishing | 5731, 15367, 21084 | 8074, 15367, 15370 |
| 9115 MITO National ‘A’ Grade Registration Motor Cycle Engineering | 15367, 15474 | 8074, 15367, 15370 |
| 9119 MITO National ‘A’ Grade Registration Panelbeating | 5770, 15367 | 8074, 15367, 15370 |

¹ For advice on business and management National Certificates and National Diplomas for the motor industry, contact:

NZ Motor Industry Training Organisation Inc
 PO Box 10 803
 WELLINGTON
 Telephone 0800 88 21 21
 Website www.mito.org.nz

Appendix 2

Requirements for Award of Qualification

The following New Zealand qualifications are approved as prerequisite qualifications for the award of this certificate:

- National Certificate in Motor Industry (Automotive Air Conditioning) [Ref: 0002]
- National Certificate in Motor Industry (Automotive Heavy Engineering) with strands in Agricultural Equipment, Plant and Equipment, and Road Transport [Ref: 0003]
- National Certificate in Motor Industry (Motorcycle Engineering) [Ref: 0015]
- National Certificate in Motor Industry (Automotive Engineering) [Ref: 0019]
- National Certificate in Motor Industry (Automotive Electrical Engineering) [Ref: 0137]
- National Certificate in Motor Industry (Diesel Fuel Injection Engineering) [Ref: 0139]
- National Certificate in Motor Industry (Automotive Refinishing) [Ref: 0178]
- National Certificate in Motor Industry (Panelbeating) [Ref: 0179]
- National Certificate in Motor Industry (Automotive Steering, Suspension, and Alignment) with an optional strand in Heavy Commercial Vehicles [Ref: 0246]
- National Certificate in Motor Industry (Automotive Machining) [Ref: 0371]
- National Certificate in Motor Industry (Coachbuilding) with strands in Passenger Service Vehicles, Commercial Vehicles, and Motor Homes and Caravans [Ref: 0413]
- National Certificate in Motor Industry (Outdoor Power Equipment Servicing) [Ref: 0697]
- National Certificate in Motor Industry (Trailer Boat Systems Engineering) (Level 4) [Ref: 0699]
- NZ Trade Certificate in Automotive Engineering
- NZ Advanced Trade Certificate in Automotive Engineering
- NZ Trade Certificate in Motor Mechanics
- NZ Advanced Trade Certificate in Motor Mechanics
- NZ Trade Certificate in Automotive Engineering (Heavy Equipment)
- NZ Advanced Trade Certificate in Automotive Engineering (Heavy Equipment)
- NZ Trade Certificate in Diesel Mechanics
- NZ Advanced Trade Certificate in Diesel Mechanics
- NZ Trade Certificate in Automotive Electrical Engineering
- NZ Advanced Trade Certificate in Automotive Electrical Engineering
- NZ Trade Certificate in Automotive Machining
- NZ Advanced Trade Certificate in Automotive Machining
- NZ Trade Certificate in Fuel Injection Engineering
- NZ Trade Certificate in Coachbuilding
- NZ Advanced Trade Certificate in Coachbuilding
- NZ Trade Certificate in Small Engine Servicing
- NZ Trade Certificate in Power Boat Servicing
- NZ Trade Certificate in Chassis Repair, Fabrication and Realignment
- NZ Trade Certificate in Motorcycle Engineering
- NZ Advanced Trade Certificate in Motorcycle Engineering
- NZ Trade Certificate in Coachpainting
- NZ Trade Certificate in Panelbeating
- NZ Advanced Trade Certificate in Panelbeating