National Vocational Certificate in Automotive Engineering (Automotive Mechatronics) (Level 4)

Level of qualification: 4

Total credits available: 260

Total credits required: 201 – 255 (depending on strand)

	Compulsory	Strand A	Strand B
Level 4 credits available	**196**	**5**	**12**
Level 5 credits available	**None**	**None**	**47**
Minimum totals required	**196**	**5**	**59**

Registration date: 22 April 2020

Scheduled review date: 22 April 2025

Body responsible for the qualification: Namibia Training Authority through the Manufacturing, Automotive Sales and Arts & Crafts Industry Skills Committee.

Other bodies whose unit standards are included in the qualification: None

1 PURPOSE

This qualification recognises people who have the competencies required for working effectively in various industries making use of the automotive repair and maintenance skills. Recipients of this qualification are able to conduct the essential maintenance and related operations associated with the range of vehicles in use today and efficient and safe operational practices in one of the following specialisation areas:

- Light Vehicles
- Earthmoving Equipment
- Commercial Trucks and Buses
- Construction and Agriculture Equipment

This qualification is awarded to people who have demonstrated the skills and knowledge required to maintain forced induction systems; overhaul engine, repair automatic transmissions and transaxles, repair axles, drivelines, shafts and final drives, repair clutches, manual transmissions and transaxles, repair diesel engine and fuel injection management systems, repair electronic ignition systems, repair four and all-wheel drive systems and controls, repair pneumatic and electronic controlled brake system, repair power shift transmissions, overhaul heavy duty diesel engines, repair heavy duty clutches and manual transmissions and repair electronic fuel injection systems. They further have a good understanding of establish a business as part of entrepreneurship operations, implement, control and monitor business operations, apply knowledge of intermediate mathematics in different context, apply advanced knowledge of engineering science in different contexts, apply knowledge of advanced engineering drawing in different contexts, apply basic knowledge of trucks and buses, apply basic knowledge on farming and construction plant equipment, repair hydrostatic drives, maintain specialised earthmoving machines, maintain specialised plant equipment, maintain agriculture planting and harvesting machines, and maintain agriculture ground preparation implements.

People seeking this qualification must complete one other specialist strands. Providers wishing to design programmes of learning related to this qualification could develop courses relating to either or both strands.

This qualification leads vertically to National Vocational Diploma in Automotive Engineering (Automotive Mechatronics) (Level 5).

2 REGULATIONS FOR THE QUALIFICATION

2.1 Summary of qualification requirements

The entry requirement for this qualification is the National Vocational Certificate in Automotive Engineering (Automotive Mechatronics) Level 3 and the ability to demonstrate basic communication skills in the English language and numeracy.

This qualification will be awarded to people who are credited with a minimum of 201 – 243 (depending on strand) credits and have met the requirements of both the compulsory and strand sections, as well as all requirements for Workplace Integrated Learning (WIL) as laid out in the draft National Policy On Work-Integrated Learning for Technical and Vocational Education and Training (TVET).

2.2 Detailed qualification requirements

Compulsory

All the unit standards listed below are required.

FIELD: Manufacturing, Engineering and Technology
Subfield: Automotive Engineering
Domain: Automotive Mechatronics

Unit ID	Unit standard title	Level	Credits
2228	Maintain forced induction systems	4	12
2229	Repair automatic transmissions and transaxles	4	10
2230	Repair axles, drive lines, shafts and final drives	4	12
2231	Repair clutches, manual transmissions and transaxles	4	12
2232	Repair diesel engine and fuel injection management systems	4	10
2233	Repair electronic ignition systems	4	11
2234	Repair four and all-wheel drive systems and controls	4	10
2235	Repair electronic fuel injection systems	4	12
2237	Repair pneumatic and electronic controlled brake systems	4	9
2238	Repair power shift transmissions	4	12
2240	Overhaul heavy duty diesel engines	4	14
2241	Repair heavy duty clutches and manual transmissions	4	12

AND

FIELD: Manufacturing, Engineering and Technology
Subfield: Mechanical Engineering
Domain: Precision Machining and Fitting

Unit ID	Unit Standard Title	Level	Credits
2226	Overhaul engines	4	15

AND
FIELD: Financial and Business Services
Subfield: Business Development
Domain: Entrepreneurship

Unit ID	Unit Standard Title	Level	Credits
735	Establish a business as part of entrepreneurship operations	4	12
736	Implement, control and monitor business operations	4	15

AND
FIELD: Physical, Mathematics and Computer Science
Subfield: Numeracy
Domain: Foundation Numeracy Skills

Unit ID	Unit Standard Title	Level	Credits
892	Apply knowledge of intermediate mathematics in different context	4	6

AND
FIELD: Manufacturing, Engineering and Technology
Subfield: Foundational Engineering Science and Engineering drawing
Domain: Foundational Engineering Science and Drawing Skills

Unit ID	Unit Standard Title	Level	Credits
896	Apply advanced knowledge of engineering science in different contexts	4	6
902	Apply knowledge of advanced engineering drawing in different contexts	4	6

SPECIALIST STRAND A: Commercial Trucks and Buses

Strand Compulsory
Credits are required for all unit standards listed below.

FIELD: Manufacturing, Engineering and Technology
Subfield: Automotive Engineering
Domain: Commercial Trucks and Buses

Unit ID	Unit Standard Title	Level	Credits
2236	Apply basic knowledge of trucks and buses	4	5

SPECIALIST STRAND B: Construction and Agriculture Equipment

Strand Compulsory
Credits are required for all unit standards listed below.

FIELD: Manufacturing, Engineering and Technology
Subfield: Automotive Engineering
Domain: Construction and Agriculture Equipment

Unit ID	Unit Standard Title	Level	Credits
2242	Apply basic knowledge on farming and construction plant equipment	4	4
2243	Repair hydrostatic drives	4	8
2255	Maintain specialised earthmoving machines	5	13
2256	Maintain specialised plant equipment	5	12
2257	Maintain agriculture planting and harvesting machines	5	12
2258	Maintain agriculture ground preparation implements	5	10

3 CREDIT RECOGNITION AND TRANSFER ARRANGEMENTS

Credits for any version of a unit standard of the same identification number will be recognised in the award of this qualification.

4 SPECIAL ARRANGEMENTS

4.1 Providers seeking registration and/or accreditation to deliver this qualification must meet the following special arrangements.

4.1.1 This qualification will be offered to trainees **either** including a period of 6 months of **industrial/job attachment**, ***or*** as an **apprenticeship scheme** of a duration determined and agreed upon by the employer and the training provider on a ratio of 70/30 (70% at workplace and 30% at training institution) basis.

Industrial/job attachment is defined as a period in a workplace setting where a trainee obtains structured practical experience in a specific occupation in order to complement competencies acquired during training at a technical vocational training provider (TVTP).

Apprenticeship refers to the system of work integrated learning, where an apprentice is employed by a company on contractual basis, earning a monthly

salary, learning and working side-by-side with an experienced mentor. In this case the employer must be an NTA approved entity (company) to register apprentices and has to identify a suitable training provider to provider to provide the apprentice with the opportunity to gain skills and knowledge from theoretical training.

Employers and training providers are encouraged to consult the **National Policy On Work-Integrated Learning (WIL) for Technical and Vocational Education and Training (TVET) Sector** for further details on WIL implementation.

4.1.2 Providers involved in the assessment of this qualification and the associated unit standards must comply with the national assessment framework for the TVET system up to and including level 5 of the National Qualifications Framework. Assessment will include performance and achievement assessment acquired through work integrated learning periods.

Assessment arrangements apply to all occupations and industries which are encompassed in the technical vocational education and training sector.

4.1.3 Providers of this qualification and the associated unit standards must be registered and/or accredited.

4.1.4 Providers of this qualification and their associated unit standards must have access to all equipment and facilities detailed in the tools and equipment list of the relevant training program.

4.2 Competencies covered in this qualification may be assessed through Recognition of Prior Learning (RPL).

4.3 Further relevant information and documentation may be accessed through:

Namibia Training Authority
10 Rand Street
Khomasdal
Namibia
Telephone number: 061 207 8550
Facsimile number: 061 207 8551

5 TRANSITION ARRANGEMENTS

5.1 Non National Qualifications Framework transition

None

5.2 National Qualifications Framework transition

This is the first version of this qualification.