National Vocational Certificate in Automotive Engineering (Foundation) (Level 2)

Level of qualification: 2

Total credits available: 110

Total credits required: 110

	Compulsory	Elective
Level 1 credits available	**35**	**None**
Level 2 credits available	**75**	**None**
Minimum totals required	**110**	**None**

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 to apply workplace safety fundamentals in automotive workshop, communicate effectively in an automotive workplace, demonstrate basic metal joining techniques used in automotive mechanics, demonstrate knowledge on fuels, lubricants and materials, perform basic metal work in automotive engineering, prepare and use bearings, seals, gaskets, sealants, adhesives and locking devises, use and maintain measuring equipment and hand tools in an automotive workplace, demonstrate knowledge of motor vehicle care, demonstrate knowledge of motor vehicle fundamentals, service wheels and tyres of a motor vehicle in an automotive mechanics workshop, remove and replace electrical/electronic units, repair engine cooling and vehicle oil lubrication systems; demonstrate knowledge; understanding of electrical fundamentals and prepare surfaces for spray painting and apply knowledge of basic mathematical and engineering science related to automotive mechanics. They further have a good understanding of providing basic first aid, demonstrating basic awareness of HIV and AIDS, demonstrating basic knowledge of workplace health and safety, applying basic entrepreneurship, applying knowledge of pre-basic mathematics in different context, applying knowledge of basic engineering science different context and applying knowledge of basic drawing different contexts.

This qualification leads vertically to National Vocational Certificate in Automotive Engineering (Vehicle Collision Repair and Spray Painting) (Level 3) and National Vocational Certificate in Automotive Engineering (Automotive Mechatronics) (Level 3).

2 REGULATIONS FOR THE QUALIFICATION

2.1 Summary of qualification requirements

The entry requirement for this qualification is the ability to demonstrate basic communication skills in the English language and basic numeracy.

This qualification will be awarded to people who are credited with a minimum of 110 credits and have met the requirements of the compulsory section, as well as all requirements for Workplace Integrated Learning (WIL) as laid out in the 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
73	Apply knowledge of basic mathematical and engineering science related to automotive mechanics	2	3
2199	Apply workplace safety fundamentals in an automotive workshop	2	5
2200	Communicate effectively in an automotive workplace	2	2
2201	Demonstrate basic metal joining techniques used in automotive mechanics	2	6
2202	Demonstrate knowledge on fuels, lubricants and materials	2	3
2203	Perform basic metal work in automotive engineering	2	5
2204	Prepare and use bearings, seals, gaskets, sealants, adhesives and locking devices	2	4
2205	Use and maintain measuring equipment and hand tools in an automotive workplace	2	7
2206	Demonstrate knowledge of motor vehicle care	2	5
2207	Demonstrate knowledge of motor vehicle fundamentals	2	7
77	Service wheels and tyres of a motor vehicle in an automotive workshop	2	3
474	Remove and replace electrical and electronic units	1	8
476	Demonstrate knowledge and understanding of electrical fundamentals	1	6

AND

FIELD: Manufacturing, Engineering and Technology
Subfield: Automotive Engineering
Domain: Spray Painting

Unit ID	Unit Standard Title	Level	Credits
1982	Prepare surfaces for spray painting	2	7

AND

FIELD: Health Science and Social Science
Subfield: Core Health
Domain: First Aid

Unit ID	Unit Standard Title	Level	Credits
843	Provide basic First Aid	1	3

AND

FIELD: Health Sciences and Social Services
Subfield: Core Health
Domain: HIV and AIDS Awareness

Unit ID	Unit Standard Title	Level	Credits
1155	Demonstrate basic awareness of HIV and AIDS	1	6

AND

FIELD: Health Science and Social Science
Subfield: Preventative Health
Domain: Occupational health and Safety

Unit ID	Unit Standard Title	Level	Credits
1157	Demonstrate basic knowledge of workplace health and safety	1	7

AND

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

Unit ID	Unit Standard Title	Level	Credits
1158	Apply basic entrepreneurship	1	5

AND

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

Unit ID	Unit Standard Title	Level	Credits
890	Apply knowledge of pre-basic mathematics in different context	2	6

AND

FIELD: Physical, Mathematics and Computer Science
Subfield: Engineering Science and Drawing
Domain: Foundation Engineering Science and Drawing Skills

Unit ID	Unit Standard Title	Level	Credits
893	Apply knowledge of basic engineering science in different contexts	2	6

AND

FIELD: Physical, Mathematics and Computer Science
Subfield: Engineering Science and Drawings
Domain: Foundation Engineering Science and Drawings Skills

Unit ID	Unit Standard Title	Level	Credits
900	Apply basic knowledge of engineering drawing in different contexts	2	6

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 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 or company to register apprentices and has to identify a suitable training 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.

National Vocational Certificate in Automotive Engineering (Automotive Mechatronics) (Level 3)

Level of qualification: 3

Total credits available: 118

Total credits required: 118

	Compulsory	Elective
Level 3 credits available	**118**	**None**
Minimum totals required	**118**	**None**

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 to carry out motor vehicle major service, demonstrate knowledge of basic electrical and electronic circuits components, maintain batteries and lighting circuits; maintain chassis and suspension systems, maintain motor vehicle emission control, repair steering systems and wheels, service hydraulic and electronically controlled motor vehicle braking system; use and maintain diagnostic testing tools and equipment, implement dealership workshop organisation, demonstrate basic knowledge of advanced car technologies, and repair vehicle lubrication systems and engine cooling systems. They further have a good understanding of identifying, creating and selecting business opportunities, developing a business plan as part of business start-up activities, applying knowledge of fundamental engineering science, applying knowledge of basic mathematics, and applying fundamental knowledge of engineering drawings in different contexts.

This qualification leads vertically to National Vocational Certificate in Automotive Engineering (Automotive Mechatronics) (Level 4).

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 – Foundation (Level 2) and the ability to demonstrate basic communication skills in the English language and basic numeracy.

This qualification will be awarded to people who are credited with a minimum of 118 credits and have met the requirements of the compulsory section, as well as all requirements for Workplace Integrated Learning (WIL) as laid out in the 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
2208	Carry out motor vehicle major service	3	12
2209	Demonstrate knowledge of basic electrical and electronic circuits and components	3	5
2210	Maintain batteries and lighting system	3	6
2211	Maintain chassis and suspension systems	3	8
2212	Maintain motor vehicle emission control	3	8
2213	Repair steering systems and wheels	3	9
2218	Repair engine cooling systems	3	6
2219	Repair vehicle lubrication systems	3	5
2214	Service hydraulic and electronically controlled motor vehicle braking systems	3	10
2215	Use and maintain diagnostic testing tools and equipment	3	6
2216	Demonstrate basic knowledge of advanced car technologies	3	5
2217	Implement dealership workshop organization	3	3

AND

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

Unit ID	Unit Standard Title	Level	Credits
733	Identify, create and select business opportunities	3	5
734	Develop a business plan as part of business start-up activities	3	12

AND

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

Unit ID	Unit Standard Title	Level	Credits
891	Apply knowledge of basic mathematics in different context	3	6

AND

FIELD: Physical, Mathematics and Computer Science
Subfield: Engineering Science and Drawing
Domain: Foundation Engineering Science and Drawing Skills

Unit ID	Unit Standard Title	Level	Credits
894	Apply knowledge of fundamental engineering science in different contexts	3	6

AND

FIELD: Physical, Mathematics and Computer Science
Subfield: Engineering Science and Drawings
Domain: Foundation Engineering Science and Drawings Skills

Unit ID	Unit Standard Title	Level	Credits
901	Apply fundamental knowledge of engineering drawing in different contexts	3	6

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.

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.