No. 412 **11** May ***2007***

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

Vehicle Maintenance

registered by Organising Field 06 – Manufacturing, Engineering and Technology, publishes the following qualification and unit standards for public comment.

This notice contains the titles, fields, subfields, NQF levels, credits, and purpose of the qualification and unit standards. The full qualification and unit standards can be accessed via the SAQA web-site at **www.saqa.org.za**. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, SAQA House, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the qualification and unit standards should reach SAQA at the address below and ***no later than*** *11* June ***2007.*** All correspondence should be marked Standards Setting – Vehicle Maintenance and addressed to

The Director: Standards Setting and Development
SAQA
Attention: Mr. *D.* Mphuthing
Postnet Suite 248
Private Bag X06
Waterkloof
0145
or faxed to 012 – 431-5144
e-mail: dmphuthing@saqa.org.za

DR. S. BHIKHA
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

QUALIFICATION:

Further Education and Training Certificate: Automotive Repair and Maintenance

SAQA QUAL ID	***QUALIFICATION TITLE***		
58539	Further Education and Training Certificate: Automotive Repair and		
Further Ed and Training Cert	6 - Manufacturing, Engineering and Technology	Manufacturing and Assembly	
ABET BAND	***MINIMUM CREDITS***	***NQF LEVEL***	***QUAL*** CLASS
Undefined	144	Level 4	Regular-Unit Stds Based

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

The purpose of the qualification is to provide learners with the id: d and the range of learning required to rk e cti i in the automotive industry, making use of super i skills to meet the challenges of the automotive industry an related environments.

The primary skill that is recognised in this qualification is the ability to apply automotive repair and maintenance technology in order to work effectively in an automotive business environment, and diagnose and repair vehicle defects.

This capability requires an understanding of basic repairing and maintenance theory. names and functions of fluids and lubricants, automotive components and how to read and interpret workshop manuals and workshop procedures.

A thorough knowledge of automotive components and systems, workshop equipment and an ability to read, interpret and understand task instructions and job cards are required.

Learners through the completion of one of the elective specialisation in this qualification will be able to conduct the essential maintenance and related operations associated with the range of vehicles on the road today using efficient and safe operational practices in the following specialisation areas:

- Passenger and Light Delivery Vehicles
- Earthmoving Equipment.
- Commercial vehicles.
- Lift trucks.
- Fuel system diagnostics.
- Automotive Body Repair.
- Engine fitting.

With this understanding learners will be able to participate in operational activities. What learners achieve in this qualification will also serve as a basis for further learning where they will engage in more complex automotive maintenance and repair activities in the field of vehicle technology.

Rationale:

This qualification in automotive repair and maintenance NQF level 4 has been developed as a progression from qualifications in automotive repair and maintenance at NQF level 3. The development was necessary for learners to carry out advanced diagnosis and repairs.

The field of automotive maintenance and repair is characterised by the overall maintenance of vehicle systems as well as the removal, dismantling and replacement of components and adjustments to vehicle systems, This in turn provides support and job opportunities to a variety of small businesses in the retail motor and related industries.

There is also a critical need in the industry to identify people who are able to conduct the essential maintenance and related operations associated with the range of vehicles on the road today and apply efficient and safe operational practices in at least one of the following specialisation areas:

- Passenger and Light Delivery Vehicles,
- Earthmoving Equipment.
- Commercial vehicles.
- Lift trucks.
- Fuel system diagnostics.
- Automotive Body Repair.

This is the third qualification in a series for learners who want to follow a career in the field of automotive repair and maintenance. This qualification focuses on developing skills and knowledge necessary to perform as a competent person in the automotive industry.

It also provides learners who have gained relevant experience in the workplace with an opportunity to obtain credits through an RPL process. The qualification also forms the basis for further learning in the field of vehicle technology.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED TO BE IN PLACE
It is assumed that learners are already competent in:

- Communication at NQF Level 3.
- Mathematical Literacy at NQF Level 3
- Workplace safety at NQF Level 3.

Recognition of Prior Learning:

This qualification may be obtained through a process of RPL. The learner should be thoroughly briefed prior to the assessment and support provided to assist in the process of developing a portfolio. While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit-level outcomes.

Access to the qualification:

- Access to this qualification is open. However it is preferable that learners have completed the National Certificate in Automotive Repair and Maintenance at NQF Level 3.
- Hand skills and physical endurance will play an important role in this qualification, and learners who have physical disabilities (depending on the type and severity of the disability) would find it difficult to achieve the outcomes of this qualification.

QUALIFICATION RULES
Communication:

- Learners are required to achieve all 23 credits for Communications and all 20 credits for a second language in a first SA language.

Mathematical Literacy:

- Learners are required to demonstrate achievement of the 16 credits for Mathematical literacy within the context of automotive operations.

Learners must achieve all 33 credits from the Core unit standards

Learners must select a specialisation area of their choice, and all the unit standards in that specialisation area must be completed. A minimum of 52 credits is required from the Elective component.

Specialisation areas consist of the following unit standards:

Specialisation area 1: Passenger and Light Delivery Vehicles:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 244139; Diagnose and repair conventional fuel injection faults; Level 4; 6 Credits.
- Elective; ID 244122; Diagnose and repair faults in induction and exhaust systems; Level 4; 4 Credits.
- Elective; ID 244131; Diagnose and repair hydraulic brake systems; Level 4; 4 Credits.
- Elective; ID 244136; Diagnose and repair cooling systems; Level 4; 4 Credits.
- Elective; ID 244143; Repair manual transmissions; Level **4;** 6 Credits.
- Elective; ID 244135: Repair suspension systems; Level 4; 5 Credits.
- Elective; ID 12220; Service and repair conventional automobile ignition systems; Level 3; 6 Credits.
- Elective; ID 244144; Diagnose and repair steering system components; Level 4; 4 Credits.

Total: 39 Credits

Specialisation area 2: Earthmoving Equipment:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 244139; Diagnose and repair conventional fuel injection faults; Level 4; 6 Credits.
- Elective; ID 244122; Diagnose and repair **faults** in induction and exhaust systems; Level 4; 4 Credits.
- Elective; ID 244131; Diagnose and repair hydraulic brake systems; Level **4; 4** Credits.
- Elective; ID 244136; Diagnose and repair cooling systems; Level 4; 4 Credits.
- Elective; ID 244126; Diagnose and repair hydraulic systems; Level **4:** 6 Credits.
- Elective; ID 244121; Diagnose, service and repair forced induction systems; Level 4; 4 Credits.
- Elective; ID 244107; Repair vehicle differentials; Level 4; **4** Credits.
- Elective; ID 244120; Test automatic transmission; Level 4; 6 Credits.

Total: 38 Credits

Specialisation area 3: Commercial Vehicle:

Category; ID; Unit Standard Title; Level; Credits:

o Elective; ID 244139; Diagnose and repair conventional fuel injection faults; Level 4; 6 Credits.
o Elective; ID 244122; Diagnose and repair faults in induction and exhaust systems; Level 4; 4 Credits.
o Elective; ID 244143; Repair manual transmissions; Level 4; 6 Credits.
o Elective; ID 244136; Diagnose and repair cooling systems; Level 4; 4 Credits.
o Elective; ID 244135; Repair suspension systems; Level 4; 5 Credits.
• Elective; ID 244144; Diagnose and repair steering system components; Level 4; 4 Credits.
o Elective; ID 244132; Diagnose and repair air and air over hydraulic brake systems; Level 4; 8 Credits.
o Elective; ID 244107; Repair vehicle differentials; Level 4; 4 Credits

Total: 40 Credits

Specialisation area 4: Lift trucks:

Category; ID; Unit Standard Title; Level; Credits:

• Elective; ID 244122; Diagnose and repair faults in induction and exhaust systems; Level 4; 4 Credits.
o Elective: ID 244143; Repair manual transmissions; Level 4; 6 Credits.
o Elective; ID 244136; Diagnose and repair cooling systems; Level 4; 4 Credits.
• Elective; ID 244126; Diagnose and repair hydraulic systems; Level 4; 6 Credits.
• Elective; ID 12221; Trace and repair auto electrical circuits on automobiles; Level 3; 20 Credits.

Totai: 40 Credits.

Specialisation area 5: Fuel system diagnostics:

Category; ID; Unit Standard Title; Level; Credits:

• Elective; ID 244122; Diagnose and repair faults in induction and exhaust systems; Level 4; 4 Credits.
• Elective; ID 12230; Diagnose, test and repair electronic automobile fuel injection systems; Level 4; 16 Credits.
• Elective; ID 244170; Remove and replace fuel injection components; Level 4; 6 Credits.
• Elective; ID 244127; Test and analyse exhaust emission gases; Level 4; 4 Credits.
• Elective; ID 244121; Diagnose service and repair forced induction systems; Level 4; 4 Credits.
• Elective; ID 244139; Diagnose and repair conventional fuel injection faults; Level 4; 6 Credits.

Total: 40 Credits

Specialisation area 6: Automotive Body Repair:

Category; ID: Unit Standard Title; Level; Credits:

• Elective; ID 244169; Estimate vehicle damage; Level 4; 4 Credits.
• Elective; ID 244167; Assess and align the body shell with chassis anchorage equipment; Level 4; 16 Credits.
• Elective; ID 244166; Repair non-ferrous metal body components; Level 4; 8 Credits.
• Elective; ID 244164; Repair nonmetal body components; Level 4; 8 Credits.
• Elective; ID 244172; Perform a pre-delivery quality assurance inspection; Level 4; 4 Credits

Total: 40 Credits.

EXIT LEVEL OUTCOMES

1. Communicate and solve problems in a variety of ways

2. Co-ordinate work activities in an automotive context

3. Diagnose and repair vehicles in a specialised area.
o Range: One of - Passenger & light delivery vehicles; Earthmoving equipment; Commercial vehicles; Forklifts, Fuel system diagnostics.

Or

4. Assemble engines and accessories.

Or

5. Repair vehicle body work

ASSOCIATED ASSESSMENT CRITERIA

1.

- Oral communication is maintained and adapted as required to promote effective interaction in a work context
- Information is accessed from standing instructions, visual information and a range of other workplace texts and responses, where required are appropriate to the context.
- Written communication is conducted at an appropriate level for designated target audiences.
- Mathematical functions are used correctly to solve routine workplace problems and tasks.

2.

- Quality is ensured in accordance with customer requirements.
- Subordinates' activities are co-ordinated to achieve work targets with available resources
- Time is managed in accordance with workplace requirements

3.

- Work area and vehicle is prepared for diagnoses and repair.
- Appropriate test equipment is connected to workplace requirements.
- Appropriate data is collected regarding the system in accordance with procedures
- System faults are identified and repaired in accordance with specifications.
- System repair is confirmed in accordance with organisational procedures.
- Safety procedures are adhered to during the diagnosing and repairing task.
- The system is diagnosed and repaired without incident, accident or injury

Or

4.

- Engine components are assembled in accordance with manufacturer specifications
- Tools and equipment are used in accordance with their designed purpose.
- Components are checked for compliance with manufacturer specifications.
- Work is conducted in accordance with workplace safety requirements.
- Documentation is completed in accordance with workplace requirements.
- Problems and their causes are identified in accordance with specifications.

Or

5.

- Repairs to vehicle damage are estimated and costed in accordance with requirements
- The vehicle body shell is aligned with chassis anchorage equipment.
- Body components are repaired to original conditions.

- Pre-delivery quality assurance inspections are conducted in accordance with set standards
- Customer relations are maintained in accordance with organisational requirements.

Integrated Assessment:

Integrated assessment provides an opportunity for learners to show they are abie to integrate concepts, actions and ideas achieved across a range of unit standards and contexts.

Integrated assessment must evaluate the quality of observable performance as well as the thinking behind the performance. Some assessment aspects will demand practical demonstration while others may not. In some case inference will be necessary to determine competence depending on the nature and context within which performance takes place.

In order to ensure that the learner is able to work within various contexts of the automotive industry, it is necessary to conduct assessments that will provide evidence that iearners are able to apply their knowledge and skills in a range of other contexts and for further learning. The assessment should also ensure that all the critical cross-fieid outcomes have been achieved.

INTERNATIONAL COMPARABILITY

This qualification is part of a series of qualifications in the field of vehicle technology including, servicing, maintenance, repairs and diagnostics and was compared to other, similar qualifications, certifications or skills standards in countries regarded as having best practice.

It was found to be difficult to compare the New Zealand and Australian narrow focus qualifications with this broad-based qualification that also include fundamentals, however the generic core and specialisation areas' unit standards did compare favourably to both the Australian (AUR99) Automotive Industry, Service and Repair unit standards and the NVQ qualification in the United Kingdom.

An example of the exact multi specialisation area approach used in this qualification was found in Australia under Automotive Retail Service Repair Training (www.automotivetraining.org.au) The range of unit standards used in Australia that relate similarly to core unit standards in this qualification may be found at (www.ntis.gov.au).

It was further difficult to undertake specific comparisons given that the New Zealand and Australian qualifications, although they are in the same field of vehicle technology and cover the same areas of specialisation (thus containing a large degree of similar content) are conceptualised as three year qualifications without exit level outcomes at the intermediate levels.

This notwithstanding, the technical content of this qualification for automotive repair and maintenance (with the various specialisations) corresponds with the equivalent level of qualification in vehicle servicing (with the various specialisations) in Australia, New Zealand and the United Kingdom.

Elements of the Institute of Motor Industry (IMI) in the UK have been used in benchmarking best practice procedures in some of the unit standards used in this qualification. The NVQ qualifications offered in the UK cover all the same objectives of this series of qualifications at various levels of complexity. The qualifications are offered as an internship wherein the learner enrols with a college or training centre for the theoretical component, and achieves the practical component in-house. The qualifications are all based on specific levels of performance, and lead to progressive levels of complexity, but are identified as separate qualifications.

The learning towards these qualifications is offered through long-term learner-employer relationships, with short-term stints at a training centre. Qualification titles in the UK include:

- Vehicle Mechanical & Electronic Systems, Maintenance and Repair - Level 3 (Q1015915).

- Vehicle Mechanical & Electronic Systems, Maintenance and Repair - Level 3 (Q1015916).
- Motorcycle Mechanical & Eiectronic Systems, Maintenance and Repair - Level 3 (Q1015918)
- Vehicle Refinishing -Level 3 (Q1017590).
- Vehicle Body Repair - Level 3 (Q1015917).
- Vehicle Body Fitting -Level 2 (Q1015913).
- Vehicle Mechanical & Eiectronic Systems, unit Replacement - Level 2 (Q1015914).

The qualifications offered in other European countries, such as Germany, are also predominantly vocational qualifications with theoretical components being achieved through a specified period at a training centre, The qualifications are aimed at achieving complete competence in all aspects of vehicle maintenance through the progressive series Of qualifications and includes mechanical, electrical and coach works. The training programmes are progressive qualifications of one year duration each and include ongoing training through workbooks in which the trainee is required to complete evidence of understanding for each month of the registered year of learning. Germany has a requirement that competent people be licensed to operate under the meister (master craftsman) programme, and this licence is valid for a period of two years.

The qualification titles offered in Germany include:

- Auto Fachman - Level 1
- Auto Fachman - Level 2.
- Auto Fachman - Level 3.
- Auto Fachman - Meister.

America uses a system of specialisation areas, with a master technician being identified as a person who is competent in all areas and will be able to perform on almost any part of a vehicle. The learning is conducted through apprenticeships and has specialisation areas for engine technicians, transmission technicians, steering and suspension technicians, brake technicians, electrical system technicians, heating and airconditioning technicians, driveability and performance technicians and lubrication technicians.

None of the SADC countries have their own qualifications relating to vehicle maintenance, but use the British City and Guilds Standards for training learners in the automotive field. Namibia has indicated interest in the South African qualifications and may implement this qualification once it has been registered.

ARTICULATION OPTIONS

This qualification allows for both horizontal and vertical articulation.

Horizontal articulation can occur with the following qualifications:

- ID 22860: Further Education and Training Certificate: Autotronics, NQF Level 4.
- ID 48915: Further Education and Training Certificate: Manufacturing and Assembly Operations Supervision, NQF Level 4.
- Further Education and Training Certificate: Vehicle sales, NQF Level 4. (under construction)

Vertical articulation can occur with the

- ID 57450: National Diploma in Automotive Diagnostics and Repair, NQF Level 5

MODERATION OPTIONS

- Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor with an appropriate Education and Training Quality Assurance Body (ETQA) or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

• Any institution offering learning that will enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

• Moderation of assessment will be overseen by the relevant ETQA or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQA's policies and guidelines for assessment and moderation.

• Moderation must include both internal and external moderation of assessments at exit points of the Qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual Unit Standards as well as in the exit level outcomes described in the Qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS
The following criteria should be applied by the relevant ETQA:

• Appropriate qualification and a minimum of 3 years experience in the field of automotive maintenance and repair or a similar environment. The subject matter experience of the assessor can be established by recognition of prior learning.
• Registration as an assessor with the relevant ETQA.
• Any other criteria required by the relevant ETQA.

NOTES
N/A

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Core	116714	Lead a team, plan, allocate and assess their work	Level 3	4
Core	123258	Foster and maintain customer relations	Level 3	10
Core	13235	Maintain the quality assurance system	Level 4	5
Core	114589	Manage time productively	Level 4	4
Core	13254	Contribute to the implementation and maintenance of business processes	Level 4	10
Elective	12225	Construct and test advanced electronic circuits	Level 4	16
Elective	12220	Service and repair conventional automobile ignition systems	Level 3	6
Elective	12221	Trace and repair auto-electrical circuits on automobiles	Level 3	20
Elective	12230	Diagnose, test and repair electronic automobile fuel injection systems	Level 4	16
Elective	244132	Diagnose and repair air and air over hydraulics brake systems	Level 4	8
Elective	244172	Perform a pre-delivery quality assurance inspection	Level 4	4
Elective	244164	Repair non-metal body components	Level 4	8
Elective	244166	Repair non-ferrous metal body components	Level 4	8
Elective	244167	Assess and align the body shell with chassis anchorage equipment	Level 4	16
Elective	244169	Estimate vehicle damage	Level 4	4
Elective	12231	Diagnose and repair engine management systems	Level 5	20
Elective	12227	Trace and repair faults on advanced auto electrical circuits	Level 4	16
Elective	114878	Identify and measure the factors that influence productivity	Level 4	10
Elective	244135	Repair suspension systems	Level 4	5
Elective	244143	Repair manual transmissions	Level 4	6
Elective	244121	Diagnose, service and repair forced induction systems	Level 4	4
Elective	244144	Diagnose and repair steering system components	Level 4	4
Elective	244126	Diagnose and repair hydraulic systems	Level 4	6
Elective	244131	Diagnose and repair hydraulic brake systems	Level 4	4
Elective	244122	Diagnose and repair faults in induction and exhaust systems	Level 4	4
Elective	244136	Diagnose and repair cooling systems	Level 4	4
Elective	244139	Diagnose and repair conventional fuel injection system	Level 4	6

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
		faults		
Elective	244130	Diagnose and repair faults in a carburetted fuel system	Level 4	4
Elective	244117	Carry out post installation checks on a remanufactured engine	Level 4	5
Elective	244134	Estimate the cost and duration of an automotive repair	Level 4	6
Elective	244129	Book in work for an automotive business	Level 4	4
Elective	244125	Inspect and balance automotive components	Level 4	6
Elective	244133	Demonstrate knowledge of forced induction performance enhancing systems	Level 4	4
Elective	244163	Remove, replace and set timing drive systems	Level 4	5
Elective	244168	Fit external components to an engine	Level 4	6
Elective	244118	Fit engine bearings and bushes	Level 4	6
Elective	244142	Remanufacture an engine crankshaft or camshaft	Level 4	15
Elective	244141	Remanufacture engine connecting rod assemblies	Level 4	4
Elective	244138	Remanufacture an engine block assembly	Level 4	25
Elective	244137	Remanufacture an engine cylinder head	Level 4	20
Elective	244140	Repair and maintain vehicle air conditioning systems	Level 4	8
Elective	244115	Replace vehicle trim	Level 3	6
Elective	244113	Apply decorative painting techniques	Level 4	4
Elective	244162	Conduct spot repairs	Level 4	4
Elective	244110	Conduct paintless dent removal	Level 3	9
Elective	244171	Test and analyse vehicle performance on a dynamometer	Level 4	6
Elective	244165	Test a vehicle engine on a dynamometer	Level 4	4
Elective	244170	Remove and install fuel system components	Level 4	6
Elective	244128	Diagonise and remedy engine malfunctions	Level 4	8
Elective	244124	Assemble a cylinder head and fit to engine	Level 4	10
Elective	244119	Assemble an engine sub assembly	Level 4	10
Elective	244123	Determine causes of engine failure	Level 4	10
Elective	244127	Test and adjust exhaust emission gases	Level 4	4
Elective	244120	Test automatic transmissions	Level 4	6
Elective	244107	Repair vehicle differentials	Level 4	4
Elective	12429	Develop a personal financial plan	Level 3	2
Elective	12228	Service and repair electronic automobile ignition systems	Level 4	12
Elective	117499	Demonstrate entrepreneurial competence	Level 4	12
Elective	9505	Manage basic business and personal finance	Level 4	6
Fundamental	119462	Engage in sustained oral/signed communication and evaluate spoken/signed texts	Level 4	5
Fundamental	119469	Read/view, analyse and respond to a variety of texts	Level 4	5
Fundamental	119459	Write/present/sign for a wide range of contexts	Level 4	5
Fundamental	116389	Write a technical report	Level 4	4
Fundamental	12417	Measure, estimate & calculate physical quantities & explore, critique & prove geometrical relationships in 2 and 3 dimensional space in the life and workplace of adult with increasing responsibilities	Level 4	4
Fundamental	9506	Communicate in an assertive manner with clients and fellow workers	Level 4	4
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	5
Fundamental	119458	Analyse and respond to a variety of literary texts	Level 3	5
Fundamental	119466	Interpret a variety of literary texts	Level 3	5
Fundamental	7468	Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	6
Fundamental	9015	Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	6

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Repair vehicle differentials

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level *4*	*4*

SPECIFIC OUTCOME **1**
Read and interpret the job instructions

SPECIFIC OUTCOME 2
Assess the condition of the **parts**

SPECIFIC OUTCOME 3
Repair and assemble the differential.

SPECIFIC OUTCOME **4**
Check the operational condition after assembly.

SPECIFIC OUTCOME 5
Apply safety procedures during the repair and assembly task.

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Carry out post installation checks on a remanufactured engine

SAQA US ID	*UNIT STANDARD TITLE*		
244117	Carry out post installation checks on a remanufactured engine		
SGB		*PROVIDEI*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELI*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level *A*	5

SPECIFIC OUTCOME 1
Perform a system check

SPECIFIC OUTCOME 2
Check an ignition system on a petrol engine

SPECIFIC OUTCOME 3
Check the air filter serviceability.

SPECIFIC OUTCOME 4
Check and adjust valve clearances.

SPECIFIC OUTCOME 5
Check and adjust engine idle speed and fuel mixture.

SOUTH AFRICAN QUALIFICATIONS AUTHORIN

UNIT STANDARD:

Fit engine bearings and bushes

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Prepare to fit bearings.

SPECIFIC OUTCOME 2
Fit bearings.

SPECIFIC OUTCOME 3
Check clearances.

SPECIFIC OUTCOME 4
Conduct post operation functions

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SGB		PROVIDER	
SGB Vehicle Maintenance			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	UNIT STANDARD *TYPE*	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

SPECIFIC OUTCOME 1
Prepare to assemble sub-assembly

SPECIFIC OUTCOME *2*
Assemble sub assembly.

SPECIFIC OUTCOME 3
Test sub-assembly for functionality.

SPECIFIC OUTCOME 4
Conduct post operation functions.

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Read and interpret the **job** instructions

SPECIFIC OUTCOME 2
Select and connect the required test equipment

SPECIFIC OUTCOME 3
Test and adjust automatic transmissions

SPECIFIC OUTCOME 4
Check the operational condition after adjustment.

SPECIFIC OUTCOME 5
Apply safety procedures during the repair and assembly task.

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Read and interpret the job instructions.

SPECIFIC OUTCOME 2
Inspect the forced induction system (turbo chargers/superchargers) for condition

SPECIFIC OUTCOME 3
Diagnose and repair the forced induction system (turbochargers/superchargers).

SPECIFIC OUTCOME 4
Confirm the operational condition of the induction system (turbochargers/superchargers)

SPECIFIC OUTCOME 5
Apply safety procedures during the diagnosing and repair task

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagnose and repair faults in induction and exhaust systems

SAQA US ID	*UNIT STANDARD TITLE*		
244122	Diagnose and repair faults in induction and exhaust systems		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD N P E*	*NQF LEVEL*	*CREDITS*

SPECIFIC OUTCOME 1
Read and interpret the **job** instructions

SPECIFIC OUTCOME 2
Inspect and clean induction and exhaust system areas

SPECIFIC OUTCOME 3
Connect the test equipment and diagnose the system problem

SPECIFIC OUTCOME 4
Repair diagnosed problem and confirm operational condition of the system after the repair

SPECIFIC OUTCOME 5
Apply safety procedures during the diagnose and repair process

SPECIFIC OUTCOME 6
Restore work area, complete and process documentation

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAOA

UNIT STANDARD:

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***

SPECIFIC OUTCOME 1
Demonstrate knowledge of principles of engine diagnostics and procedures

SPECIFIC OUTCOME *2*
Diagnose engine failures

SPECIFIC OUTCOME 3
Determine causes of component failure

SPECIFIC OUTCOME 4
Conduct post operation functions

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Assemble a cylinder head and *fit to* engine

SAQA *US* ID	UNIT STANDARD TITLE		
244124	Assemble a cylinder head and fit to engine		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	10

SPECIFIC OUTCOME 1
Prepare to assemble cylinder heads

SPECIFIC OUTCOME 2
Assemble cylinder heads.

SPECIFIC OUTCOME 3
Fit cylinder head to an engine

SPECIFIC OUTCOME 4
Conduct post operation functions.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Inspect and balance automotive components

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level **4**	6

SPECIFIC OUTCOME 1
inspect automotive components

SPECIFIC OUTCOME 2
Prepare to balance automotive components.

SPECIFIC OUTCOME 3
Balance automotive components.

SPECIFIC OUTCOME 4
Conduct post operation functions.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagnose and repair hydraulic systems

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Read and interpret the job instructions

SPECIFIC OUTCOME 2
Prepare and inspect the vehicle

SPECIFIC OUTCOME 3
Test and diagnose faults

SPECIFIC OUTCOME 4
Repair and test the system

SPECIFIC OUTCOME 5
Apply safety procedures during the diagnosing and repair task

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation.

SAQA

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Test and adjust exhaust emission gases

SAQA US ID	*UNIT STANDARD TITLE*		
244127	Test and adjust exhaust emission gases		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	**CREDITS**
Undefined	Regular	Level **4**	**4**

SPECIFIC OUTCOME 1
Read and interpret the job instructions

SPECIFIC OUTCOME *2*
Select and connect the required test equipment.

SPECIFIC OUTCOME 3
Test, diagnose and adjust exhaust emission gas

SPECIFIC OUTCOME *4*
Apply safety concepts during diagnosing and repairing of fuel injection systems.

SPECIFIC OUTCOME 5
Restore work area and complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagonise and remedy engine malfunctions

SAQA US ID	*UNIT STANDARD TITLE*		
24412%	Diagonise and remedy engine malfunctions		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level **4**	8

SPECIFIC OUTCOME 1
Demonstrate knowledge of engine malfunctions.

SPECIFIC OUTCOME 2
Diagnose engine malfunctions.

SPECIFIC OUTCOME 3
Rectify engine malfunctions.

SPECIFIC OUTCOME 4
Conduct post operation functions.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Book in work for an automotive business

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing. Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
		Level 4	4

SPECIFIC OUTCOME 1
Receive the customer.

SPECIFIC OUTCOME **2**
Obtain the details for the job.

SPECIFIC OUTCOME 3
Complete job acceptance procedures

SPECIFIC OUTCOME **4**
Provide feedback to the customer.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagnose and repair faults in a carburetted fuel system

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Read and interpret the job instructions

SPECIFIC OUTCOME 2
Diagnose carburetted fuel system faults and their causes

SPECIFIC OUTCOME 3
Repair carburettor and fuel system faults and test the operation.

SPECIFIC OUTCOME 4
Apply safety concepts during diagnosing and repairing of fuel injection systems

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagnose and repair hydraulic brake systems

SGB		PROVIDER	
SGB Vehicle Maintenance			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Read and interpret the job instructions.

SPECIFIC OUTCOME 2
Prepare and position the vehicle.

SPECIFIC OUTCOME 3
Diagnose and repair system faults.

SPECIFIC OUTCOME 4
Commission the brake system after repairs.

SPECIFIC OUTCOME 5
Apply safety procedures during the diagnosing and repair of the brake system.

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagnose and repair air and air over hydraulics brake systems

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level **4**	8

SPECIFIC OUTCOME 1
Read and interpret the job instructions.

SPECIFIC OUTCOME 2
Prepare and position the vehicle.

SPECIFIC OUTCOME 3
Diagnose and repair system faults

SPECIFIC OUTCOME 4
Test and commission the brake system

SPECIFIC OUTCOME 5
Apply safety procedures during the diagnosing and repair of the brake system.

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of forced induction performance enhancing systems

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Demonstrate knowledge of engine performance and efficiency

SPECIFIC OUTCOME 2
Demonstrate knowledge of supercharging systems

SPECIFIC OUTCOME 3
Demonstrate knowledge of turbo charging systems.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Establish the details for calculating an estimate

SPECIFIC OUTCOME 2
Prepare a repair estimate

SPECIFIC OUTCOME 3
Produce and record the estimate

SAQA

SOUTH AFRICAN QUALIFICATIONS AUTHORIN

UNIT STANDARD:

Repair suspension systems

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	5

SPECIFIC OUTCOME 1
Read and interpret the job instructions.

SPECIFIC OUTCOME 2
Prepare ihe vehicle and inspect the suspension for faulty parts.

SPECIFIC OUTCOME 3
Repair the suspension system and restore the vehicle.

SPECIFIC OUTCOME 4
Perform quality checks on the repaired suspension system

SPECIFIC OUTCOME 5
Apply safety procedures during the repair of suspension system

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagnose and repair cooling systems

SGB		PROVIDER	
SGB Vehicle Maintenance			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	UNIT STANDARD NPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Read and interpret the job instructions.

SPECIFIC OUTCOME 2
Prepare and position the vehicle for inspection

SPECIFIC OUTCOME 3
Connect the test equipment and diagnose faults

SPECIFIC OUTCOME 4
Repair and test the system

SPECIFIC OUTCOME 5
Apply safety procedures during the diagnosing and repair task

SPECIFIC OUTCOME 6
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remanufacture an engine cylinder *head*

SGB		PROVIDER	
SGB Vehicle Maintenance			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	120

SPECIFIC OUTCOME 1
Inspect and test an engine cylinder head

SPECIFIC OUTCOME 2
Prepare to remanufacture an engine cylinder head

SPECIFIC OUTCOME 3
Remanufacture an engine cylinder head

SPECIFIC OUTCOME 4
Conduct post operation functions.

SOUTH AFRICAN QUALIFICATIONS AUTHORIN

UNIT STANDARD:

Remanufacture an engine block assembly

SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	

SPECIFIC OUTCOME 1
Inspect and test an engine block assembly.

SPECIFIC OUTCOME 2
Prepare *to* remanufacture an engine block assembly.

SPECIFIC OUTCOME 3
Remanufacture an engine block assembly

SPECIFIC OUTCOME 4
Conduct post operation functions

SAQA

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

***Diagnose and repair conventional fuel injection system* faults**

SAQA US ID	*UNIT STANDARD TITLE*		
244139	Diagnose and repair conventional fuel injection system faults		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Read and interpret the job instructions.

SPECIFIC OUTCOME 2
Select and connect the required test equipment.

SPECIFIC OUTCOME 3
Test, diagnose and repair fuel injection system faults.

SPECIFIC OUTCOME *4*
Confirm system repairs.

SPECIFIC OUTCOME 5
Apply safety concepts during diagnosing and repairing of fuel injection systems

SPECIFIC OUTCOME 6
Restore work area, complete and process documentation

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Repair and maintain vehicle air conditioning systems

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	8

SPECIFIC OUTCOME 1
Explain the function of components in a vehicle air-conditioning system

SPECIFIC OUTCOME 2
Read and interpret air-conditioning electrical circuit diagrams and component symbols

SPECIFIC OUTCOME 3
Identify vehicle air conditioning problems

SPECIFIC OUTCOME 4
Repair and maintain vehicle air-conditioning systems.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remanufacture engine connecting rod assemblies

SAQA US ID	*UNIT STANDARD TITLE*		
244141	Remanufacture engine connecting rod assemblies		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Inspect and test connecting rod assemblies.

SPECIFIC OUTCOME *2*
Prepare to remanufacture connecting rod assemblies

SPECIFIC OUTCOME 3
Remanufacture connecting rod assemblies.

SPECIFIC OUTCOME 4
Conduct post operation functions

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remanufacture an engine crankshaft or camshaft

SAQA US ID	*UNIT STANDARD TITLE*		
244142	Remanufacture an engine crankshaft or camshaft		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	15

SPECIFIC OUTCOME 1
Inspect and test crankshafts or camshafts

SPECIFIC OUTCOME 2
Prepare to remanufacture crankshafts or camshafts

SPECIFIC OUTCOME 3
Remanufacture crankshafts or camshafts

SPECIFIC OUTCOME 4
Conduct post operation functions.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Repair manual transmissions

SGB		***PROVIDER***	
SGE Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level **4**	6

SPECIFIC OUTCOME 1
Read and interpret the job instructions

SPECIFIC OUTCOME 2
Assess the condition of the parts.

SPECIFIC OUTCOME 3
Repair and assemble the transmission

SPECIFIC OUTCOME 4
Check the operational condition after assembly

SPECIFIC OUTCOME 5
Apply safety procedures during the repair and assembly task.

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Diagnose and repair steering system components

SAQA US ID	*UNIT STANDARD TITLE*		
244144	Diagnose and repair steering system components		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - fa il e i and Technology		Manufacturin and r ibly	
ABET 4	*N NDARD TYPE*	*NQF LEVEL*	*CREDITS*
l d	e	Level 4	4

SPECIFIC OUTCOME 1
Read and interpret the job instructions

SPECIFIC OUTCOME 2
Explain the function and operation of a steering system.

SPECIFIC OUTCOME 3
Inspect and determine the condition of the steering system, system problems and causes

SPECIFIC OUTCOME 4
Diagnose and repair steering system components and test the operation

SPECIFIC OUTCOME 5
Apply safety procedures during the diagnosing and repair task.

SPECIFIC OUTCOME 6
Restore work area and complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remove, replace and set timing drive systems

SAQA *US* ID	UNIT STANDARD TITLE		
244163	Remove, replace and set timing drive systems		
SGB		PROVIDER	
SGB Vehicle Maintenance			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	5

SPECIFIC OUTCOME 1
Remove an engine timing drive systems

SPECIFIC OUTCOME 2
Fit a timing drive systems to an engine.

SPECIFIC OUTCOME 3
Set cam timing.

SPECIFIC OUTCOME 4
Conduct post operation functions

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Repair non-metal body components

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level **4**	8

SPECIFIC OUTCOME 1
Demonstrate knowledge of repair procedures for different non-metal materials **used** in auto body components.

SPECIFIC OUTCOME 2
Assess the damage and determine the scope of repair

SPECIFIC OUTCOME 3
Repair the damaged component.

SPECIFIC OUTCOME 4
Perform a quality evaluation of the repaired panel

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Test a vehicle ***engine on a dynamometer***

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Read and interpret the job instructions

SPECIFIC OUTCOME 2
Prepare the test cell, secure and connect engine.

SPECIFIC OUTCOME 3
Test engine, record and submit results

SPECIFIC OUTCOME 4
Disconnect and remove engine and restore the test cell.

SPECIFIC OUTCOME 5
Apply safety concepts during dynamometer testing of the engine

SOUTH AFRICAN QUALIFICATIONS AUTHORIN

UNIT STANDARD:

Repair non-ferrous metal body components

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level ***4***	8

SPECIFIC OUTCOME 1
Demonstrate knowledge of repair procedures for different non-ferrous metals used in auto body components.

SPECIFIC OUTCOME 2
Assess the damage and determine the scope of repair.

SPECIFIC OUTCOME 3
Repair the damaged component.

SPECIFIC OUTCOME 4
Perform a quality evaluation of the repaired panel

SPECIFIC OUTCOME 5
Restore work area, complete and process documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Assess and align the body shell with chassis anchorage equipment

SAQA US ID	UNIT STANDARD TITLE		
244167	Assess and align the body shell with chassis anchorage equipment		
SGB		PROVIDER	
SGB Vehicle Maintenance			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Techno ogy		Manufacturing and Assembly	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level4	16

SPECIFIC OUTCOME 1
Understand the basic concepts of body shell and chassis measuring.

SPECIFIC OUTCOME 2
Assess the damage to the body shell and/or chassis and/or suspension.

SPECIFIC OUTCOME 3
Mount a vehicle on the anchorage system and align the damaged area in a safe and aware manner.

SPECIFIC OUTCOME 4
Perform a quality evaluation of the repaired area and restore the work area

SPECIFIC OUTCOME 5
Interact with others during the process.

SPECIFIC OUTCOME 6
Deliver the repairs and restore the work area.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Fit external components ***to*** an engine

SAQA US ID	***UNIT STANDARD TITLE***		
244168	Fit external components to an engine		
SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing. Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNIT STANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Demonstrate knowledge of fitting external engine components.

SPECIFIC OUTCOME 2
Prepare to fit external components.

SPECIFIC OUTCOME 3
Fit external components.

SPECIFIC OUTCOME **4**
Conduct post fitment functions.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Estimate vehicle damage

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNITSTANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Identify the extent of damage.

SPECIFIC OUTCOME 2
Estimate costs to repair the damage.

SPECIFIC OUTCOME 3
Communicate extent of work

SPECIFIC OUTCOME 4
Apply safety procedures during vehicle estimating

SOUTH AFRICAN QUALIFICATIONS AUTHORIN

UNIT STANDARD:

***Remove* and *install fuel* system components**

SAQA US ID	*UNIT STANDARD TITLE*		
244170	Remove and install fuel system components		
SGB		*PROVIDER*	
SGB Vehicle Maintenance			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Demonstrate knowledge of the functions of fuel system components.

SPECIFIC OUTCOME 2
Prepare to remove and fit fuel system components

SPECIFIC OUTCOME 3
Remove and fit fuel system components.

SPECIFIC OUTCOME 4
Conduct post operation functions

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Test and analyse vehicle performance on a dynamometer

SGB		***PROVIDER***	
SGB Vehicle Maintenance			
FIELD		***SUBFIELD***	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	***UNITSTANDARD TYPE***	***NQF LEVEL***	***CREDITS***
Undefined	Regular	Level 4	6

SPECIFIC OUTCOME 1
Read and interpret the job instructions

SPECIFIC OUTCOME *2*
Prepare the vehicle for analysis

SPECIFIC OUTCOME 3
Test vehicle, record and submit results.

SPECIFIC OUTCOME 4
Disconnect and remove vehicle and restore the test room.

SPECIFIC OUTCOME 5
Apply safety concepts during dynamometer testing of the vehicle.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Perform a pre-delivery quality assurance inspection

SAQA US ID	UNIT STANDARD TITLE		
244172	Perform a pre-delivery quality assurance inspection		
SGB		PROVIDER	
SGB Vehicle Maintenance			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Manufacturing and Assembly	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

SPECIFIC OUTCOME 1
Collate all the relevant task information

SPECIFIC OUTCOME 2
Perform a post repair inspection

SPECIFIC OUTCOME 3
Hand over the vehicle to the client.

SPECIFIC OUTCOME 4
Apply safety procedures during quality assurance inspections