

No. 784

31 August 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

Secondary Agriculture: Processing

registered by Organising Field 01, Agriculture and Nature Conservation, publishes the following Qualification and Unit Standards for public comment.

This notice contains the titles, fields, sub-fields, 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.saqqa.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 31 September 2007**. All correspondence should be marked **Standards Setting – Secondary Agriculture: Processing** 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

QUALIFICATION:**National Certificate: Agricultural Equipment Service and Repair**

SAQA QUAL ID	QUALIFICATION TITLE		
59099	National Certificate: Agricultural Equipment Service and Repair		
ORIGINATOR			PROVIDER
SGB for Secondary Agriculture: Processing			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	1 - Agriculture and Nature Conservation	Secondary Agriculture	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	128	Level 2	Regular-Unit Stds Based

PURPOSE OF THE QUALIFICATION

Purpose:

This qualification addresses competencies related to the occupation of an Agricultural Equipment Mechanical Artisan and is the first level of learning in the Further Education and Training band of the career. The qualification is structured to address mechanical workshop competencies related to servicing of agricultural equipment and mechanical repairs of agricultural equipment.

The unit standards in the compulsory core component of the qualification reflect the skills and competencies needed to progress in an Agricultural Equipment Mechanical Artisan career. The unit standards focus on a range of mechanical systems and components common to agricultural equipment. Qualifying learners will be competent to remove, dismantle and install complex components common to agricultural equipment and overhaul minor components which are less complex. The scope of the unit standards recognises the need for specific learning and assessment related to different mechanical systems and components. Variations in technical complexity, mechanical working principles and methods and techniques that apply to the mechanical maintenance and repair of the systems are embedded in this approach. Differentiation between removal, dismantling and installation of complex systems and overhauling of minor components enhances the employability of qualifying learners and address the needs of industry for enhanced workplace efficiencies. The approach ensures that learners at NQF Level 2 are able to perform meaningful activities at this level in comparison to an approach where learners would be strippers and fitters of components only.

The elective component of the qualification enables the learner to select a number of unit standards related to higher level document and information management on a personal computer, unit standards with a specific focus on engineering related competencies and learning related to the application of business principles. The selection of the elective unit standards will be influenced by the needs of the workplace or the career path selected by the learner. Computer technology is commonly used in many mechanical workshops and could be a natural selection by many whereas specific workplaces require technicians to be competent in minor body repairs and spray painting or the production of simple components on a lathe. The competency to apply basic business principles is introduced as a first learning component for learners wanting to establish themselves as entrepreneurs. The learner is required to select at least 20 credits from the elective unit standards included. This means that a learner will not be able to select the basket of unit standards related to the utilisation of a personal computer only. If selected, at least one additional elective unit standard will have to be selected by the learner.

This qualification seeks to address both needs and thereby enhancing the employability of the qualifying learner.

Through the establishment of a career path and the employment of competent employees who are able to perform the range of mechanical duties entrenched in this qualification, employers and in turn the field and sub-field have confidence that agricultural equipment will be efficiently and safely serviced, repaired and maintained.

Social development and economic transformation are enhanced through this career path and the associated qualifications, including this qualification. Career development, personal recognition and job satisfaction are facilitated through the learning process associated with this qualification and the qualifications that establishes this career path.

Rationale:

This qualification is part of a career path of an Agricultural Equipment Mechanical Artisan and the first level of learning in the Further Education and Training band of the career path that reflects the workplace-based needs of the agricultural equipment industry as expressed by employers and employees, both now and for the future. The agricultural equipment industry is well established in South Africa. Success in this industry is largely dependant upon the availability of competent Agricultural Equipment Mechanical Artisans, developed in accordance with a defined career path. The range of competencies and complexities associated with the Agricultural Equipment Mechanical Artisan career path can only be effectively achieved through structured progressive learning over a period of time. This qualification progressively develops the mechanical workshop competencies of learners and achieves specific focused outcomes that will enhance the employability of persons in the agricultural equipment mechanical industry.

A current scarcity is experienced by the agricultural equipment mechanical industry in these skills. An adequate number of people with these skills are needed to ensure that the South Africa agricultural sector meet the challenges of increased efficiencies and productivity levels.

The learners are expected to benefit by enhanced career opportunities and earning potential that will also benefit the local community and the economy.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED IN PLACE

This qualification has been designed to address competencies related to mechanical workshop practices, and does not assume prior learning or experience.

It is assumed that a learner entering this qualification has achieved experience through comparable learning or through work experience or by completing a registered GET Qualification related to Basic Mechanical Workshop Practices at NQF Level 1.

This qualification further assumes that a learner is already competent in the knowledge, comprehension and application of language, mathematics and technology principles at NQF Level 1. When learners do not have this learning assumed to be in place, appropriate adjustments to the learning process will be required.

Recognition of Prior Learning:

This qualification may be achieved in part or completely through the recognition of prior learning, which includes formal, informal and non-formal learning and work experience.

Access to the Qualification:

Open access.

QUALIFICATION RULES

- All fundamental unit standards are compulsory: 36 credits.
- All core unit standards are compulsory: 72 credits.
- A minimum of 20 credits should be chosen from the elective component.
- A minimum total of 128 credits are required to obtain this qualification.

EXIT LEVEL OUTCOMES

On completion of this qualification learners are able to:

1. Service agricultural equipment.
2. Remove, dismantle and install system components of agricultural equipment.
3. Use a personal computer to manage and compile information (Elective).
4. Engineer or form components of sheet metal (Elective).
5. Apply basic business principles in a mechanical workshop (Elective).
6. Repair minor damage to body parts and spray paint body parts (Elective).

Critical Cross-Field Outcomes:

This qualification addresses the following critical cross-field outcomes. The way in which the critical cross-field outcomes are addressed is presented in detail in the unit standards outlined.

Identify and solve problems in which response displays that responsible decisions, using critical and creative thinking, have been made by:

- Applying knowledge and comprehension of technical specification, mechanical functioning and technical operational principles of systems and system components.
- Dealing effectively with problems and eventualities that occur during the normal execution of routine activities.
- Applying standard operating procedures.

Evident in Exit Level Outcomes 1, 2, 3, 4, 5 and 7.

Work effectively with others as a member of a team, group, organisation or community by:

- Adhering to workplace policies, procedures and standard work instructions.
- Co-ordinating one's work with that of others in the work area and the workplace.

Evident in Exit Level Outcomes 1, 2, 3, 4, 5, 6 and 7.

Organise and manage oneself and one's activities responsibly and effectively by:

- Plan and execute activities in a structured and organised manner.
- Identifying and reporting discrepancies, risks and deviations that pose a threat to the occupational safety and efficiencies of the workplace.
- Adhere to occupational health, safety and environment protection measures.

Evident in Exit Level Outcomes 1, 2, 3, 4, 5, 6 and 7.

Collect, analyse, organise and critically evaluate information by:

- Completing and maintaining workshop records.
- Accessing manufacturer information and specifications from data sources available at the workplace.
- Capturing and organising data and information on a personal computer.
- Defining, analysing and pro-actively addressing customer needs and expectations.

Evident in Exit Level Outcomes 1, 2, 3, 4, 5, 6 and 7.

Communicate effectively by using mathematical and/or language skills in the modes of oral and/or written presentations by:

- Calculating measurements and using measuring instruments.
- Ensuring understanding of and executing instructions received.
- Attending customer needs and expectations.
- Managing documents, data and information on a personal computer.

Evident in exit level outcomes 1, 2, 3, 4, 5, 6 and 7.

Use science and technology effectively and critically, showing responsibility towards the environment and health of others by:

- Working according to health, safety and environmental protection regulations.

Evident in Exit Level Outcomes 1, 2, 3, 5, and 7.

Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation by:

- Understanding the potential scope of impact of inferior workmanship and non-adherence to manufacturer specifications from a safety, efficiency and customer perspective.

Evident in Exit Level Outcomes 1, 2, 3, 5, 6 and 7.

Contribute to the full personal development of each learner and the social and economic development of the society at large by:

- Reflecting on and exploring a variety of strategies to learn more effectively.
- Participating as responsible citizens in the field of local, national and global communities.
- Being culturally and aesthetically sensitive across a range of social contexts.
- Exploring education and career opportunities; developing entrepreneurial opportunities.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- Knowledge of technical specifications of lubricants, coolants and standard service parts is demonstrated.
- The service is planned and executed in a organised and structured manner according to manufacturer specifications.
- The required technical skills and comprehension is demonstrated through the method used, the tools and equipment selected, the sequence of activities followed and the quality of the end product.
- Manufacture specifications are confirmed and complied with.

- Workplace personal safety and environmental protection and preventative measures are complied with.
- The workplace is kept safe and productive by adherence to policies, procedures and standard work instructions.
- Accurate and complete workshop documentation and records are maintained.

Associated Assessment Criteria for Exit Level Outcome 2:

- Knowledge of basic mechanical functioning and technical operational principles of the applicable range of systems, components and parts is demonstrated.
- The task is planned and executed in an organised and structured manner according to manufacturer specifications.
- The required technical skills and comprehension is demonstrated through the method used, the tools and equipment selected, the sequence of activities followed and the quality of the end product.
- Manufacture specifications are confirmed and complied with.
- Workplace personal safety and environmental protection and preventative measures are complied with.
- The workplace is kept safe and productive by adherence to policies, procedures and standard work instructions.
- Accurate and complete workshop documentation and records are maintained.

Associated Assessment Criteria for Exit Level Outcome 3:

- Advanced formatting functions are applied to structure and present documents through word processing.
- Data and information is captured, edited and presented by means of spreadsheet applications.
- Messages are compiled, sent, received and managed by means of electronic mail applications.

Associated Assessment Criteria for Exit Level Outcome 4:

- Manufacturing, cutting or forming is done to final product specification.
- The task is planned and executed in an organised and structured manner.
- The required technical skills and comprehension is demonstrated through the method used, the tools and equipment selected, the sequence of activities followed and the quality of the end product.
- Workplace personal safety and environmental protection and preventative measures are complied with.
- The workplace is kept safe and productive by adherence to policies, procedures and standard work instructions.
- Accurate and complete workshop documentation and records are maintained.

Associated Assessment Criteria for Exit Level Outcome 5:

- The utilisation of workshop resources and facilities are planned and optimised.
- Business and personal goals are planned and aligned.
- Customer needs and expectations are defined, analysed and pro-actively addressed.

Associated Assessment Criteria for Exit Level Outcome 6:

- Minor body repairs and spray painting is done to final product specification.
- The task is planned and executed in an organised and structured manner.
- The required technical skills and comprehension is demonstrated through the method used, the tools and equipment selected, the sequence of activities followed and the quality of the end product.

- Workplace personal safety and environmental protection and preventative measures are complied with.
- The workplace is kept safe and productive by adherence to policies, procedures and standard work instructions.
- Accurate and complete workshop documentation and records are maintained.

Integrated Assessment:

The applied competence (practical, foundational and reflexive competencies) of this qualification will be achieved if a candidate is able to achieve all the exit level outcomes of this qualification.

Appropriate methods and tools must be used to assess practical, foundational and reflexive competence of the learner in all the exit level outcomes listed above, as well as to determine a learner's ability to solve problems, work in a team, organise him/herself, use applied science, and understand the implications of actions and reactions in the world as a set of related systems. Such an assessment process will determine development of the whole person, and the integration of applied knowledge and skills.

Assessors should develop, conduct, and ensure integration of assessment by making use of a range of formative and summative assessment methods against the unit standards that make up the qualification. Combinations of applied, foundational and reflective competencies, including critical cross-field outcomes, should be assessed wherever possible.

Moderators should ensure that assessment is valid, consistent and integrated into work or learning, and that there is sufficient and authenticated evidence of learner competence against the whole qualification.

INTERNATIONAL COMPARABILITY

This qualification is an entry level qualification within a progression of learning towards the occupation of an Agricultural Equipment Technician. This qualification and the associated qualifications within this career path were collectively compared to international trends. This career path and the associated qualifications is the product of consultation with subject matter experts from various stakeholders with an interest in the mechanical maintenance and repair of agricultural equipment. It strengthens the competencies associated with best practices in mechanical maintenance and repair of agricultural equipment as confirmed through extensive research and consultation with subject matter experts in the field.

No South African qualification currently exists to address the entry level training needs of persons entering a career as an Agricultural Equipment Technician.

The international comparisons and research on international trends was done within the focus of a career path or learning that will support an occupation for agricultural equipment technicians or mechanics.

International comparison with Australia, New Zealand and the United Kingdom uncovered no qualifications or career path with a specific focus in Agricultural Equipment Technicians or Mechanics. The qualifications in these countries include a wide range of learning units related to maintenance and repair of vehicles in general. Some of the focus areas, as prevalent from the units in these qualifications, are comparable with this qualification.

The qualification Automotive Retail Service and Repair and associated units of competence as registered under the qualification frameworks of Australia serves as a good example. Approximately 300 different units of competency are listed under this qualification. General units of competence are included related to focus areas such as mechanical tools, arc welding and brazing, customer service, units with a financial focus, etc. The approach followed in this qualification supports the approach to structure specific mechanical units of competency

according to different mechanical components and systems. Different unit of competency is registered for overhauling, repair and maintenance of a range of mechanical systems and components of vehicles such as:

- Electrical systems.
- Hydraulic systems.
- Drive train systems.
- Steering systems.
- Breaking systems and so on.

International research on training and development with a specific focus on Agricultural Equipment Technicians or Mechanics revealed that various states within the United States of America, Canada and India recognise the need for specific training and development of technicians or mechanics for the agricultural industry. Benchmarking was carried out against curricula accepted by Florida for training of Agricultural Mechanics, the Mississippi curriculum for training in Agricultural Mechanics Technology, the occupational profile endorsed by Canadian Red Seal Program for training of artisans as Farm Equipment Mechanics and the syllabus for Tractor Mechanics under the Indian Government Craftsmen and Apprenticeship training scheme.

These studies were very informative and support the best practices model accepted by stakeholders from the South African industry that establish a career for Agricultural Equipment Technicians. The cumulative competencies that result from the progression of qualifications in this career path address the outcomes associated with a fully qualified agricultural equipment technician as defined by the curricula or occupational profiles accepted by these countries.

The curricula that are followed by Florida for training of Agricultural Mechanics provide for core learning and specific occupational completion points as elective components. A range of outcomes that learners will be able to perform upon completion of these occupational completion points are specified in the curriculum. The curriculum further set out a range of specific student performance standards that must be met for each of the outcomes. The curriculum recognises for example "Tractor Mechanic" as an occupational completion point. Upon completion of this learning, students will be able to:

- Diagnose, service and repair the lubrication system.
- Test, repair and/or replace and maintain the cooling system.
- Test, repair and/or replace the intake, exhaust and turbo charged system.
- Test, repair and/or replace the fuel delivery system.
- Test, repair and/or replace and maintain the brake system.
- Test, repair and/or replace internal-combustion engines.
- Test, repair and/or replace the electrical system, using service manuals.
- Diagnose, service and repair transmission systems.
- Service and repair transfer case.
- Diagnose, service, repair and maintain the hydraulic system.
- Diagnose, service and repair the final drive system.
- Apply business management skills and identify appropriate legal documents.

Specific student performance standards are listed for each of the above, for example:

Diagnose service and repair the lubrication system:

- Change oil filters.
- Check and change oils and lubricants in engines.
- Diagnose and replace damaged or worn components of the system.

Test, repair and/or replace the intake, exhaust and turbo charged system:

- Troubleshoot the intake, exhaust and turbo-charged systems using recommended diagnostic equipment.
- Repair and replace parts of the system.
- Service and adjust the systems for proper operation.

The occupational profile endorsed by the Canadian Red Seal program provides a detailed analysis of the operational outcomes that the learners must be able to do. This is further clarified with the skills and the knowledge that the learners must acquire to adequately perform the various operational outcomes. This profile is a comprehensive and detailed document that served as a guideline for benchmarking the various unit standards included in the Agricultural Equipment Technician qualifications included in this career path.

The syllabus for Tractor Mechanics approved by the Government of India provides a detailed structure of learning for the Tractor Mechanics craftsmen and apprenticeship training scheme. Amongst others, the syllabus lists the operations/skills that must be learned by the craftsmen. This comprehensive list of skills resembles the competencies, both in scope and in terms of the approach followed with the structure of the Agricultural Equipment Technician qualifications included in this career path, closely. The approach followed in the syllabus is also structured in terms of specific learning related to the various mechanical systems and components of agricultural equipment such as:

- Steering and breaks.
- Hydraulic systems.
- Electrical systems.
- Air intake systems.
- Power units.
- Engine assemblies.
- Transmission systems.

The Mississippi curriculum for training in Agricultural Mechanics Technology is comparable in scope and structure to the Agricultural Equipment Technician qualifications submitted for registration.

A search of the SADC countries revealed no comparative qualifications for Tractor Mechanics or Agricultural Equipment Technicians. Research confirmed that mechanical workshop staff from Swaziland, Namibia, Zimbabwe, Angola, Malawi, Zambia, Mozambique and Botswana regularly received training in South Africa presented by agents of agricultural equipment. This training lacked recognition in the absence of a recognised career path and associated registered qualifications.

ARTICULATION OPTIONS

This qualification is the second of four qualifications that establishes a career path for Agricultural Equipment Technicians which will enable the qualifying learner to progress vertically to the higher level qualifications in this career path.

The generic expertise obtained through this qualification will also enable qualifying learners to progress to the related qualifications in mechanical studies such as the qualifications registered by the SGB: Vehicle Maintenance and to qualifications in the engineering field.

MODERATION OPTIONS

- Anyone moderating the assessment of learners against this Qualification must be registered as a moderator with the relevant ETQA.
- Any institution offering learning that will enable the achievement of this Qualification must be accredited or recognised as a provider with the relevant ETQA.

- Assessment and moderation will be overseen by the relevant ETQA according to the ETQA's policies and guidelines for assessment and moderation; in terms of agreements reached around assessment and moderation between ETQAs (including professional bodies); and in terms of the moderation guideline detailed immediately below.

- 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, exit level outcomes as well as the integrated competence described in the qualification.

- Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution that is accredited by the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

For an applicant to register as an assessor, the following are essential:

- Anyone assessing a learner against this qualification must be registered as an assessor with the relevant ETQA, or with another ETQA that has a Memorandum of Understanding with the relevant ETQA.
- The applicant should be a qualified artisan or have a similar qualification to this one at NQF Level 3 or higher, with a minimum of 12 months field experience.

NOTES

This qualification replaces qualification 14891, "National Certificate: Agricultural Machinery Technician", Level 2, 140 credits.

Access is open to anyone with access to learning opportunities and work experience on an appropriate selection of different agricultural equipment. Agricultural equipment refers to and includes implements, machines and equipment used in the various agricultural production systems.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Core	246771	Care for and maintain electrical components of agricultural equipment	Level 2	10
Core	246761	Conduct a scheduled service on agricultural equipment	Level 2	4
Core	246770	Overhaul breaking system components on agricultural equipment	Level 2	4
Core	246772	Overhaul electrical system components on agricultural equipment	Level 2	4
Core	246765	Overhaul minor drive train components on agricultural equipment	Level 2	4
Core	246759	Overhaul minor engine system components on agricultural equipment	Level 2	4
Core	251923	Overhaul minor hydraulic components on agricultural equipment	Level 2	8
Core	246767	Overhaul steering system components on agricultural equipment	Level 2	4
Core	246762	Remove, disassemble and install engine system components of agricultural equipment	Level 2	3
Core	246760	Remove, dismantle and install drive train components of agricultural equipment	Level 2	8
Core	246769	Remove, dismantle and install hydraulic system components of agricultural equipment	Level 2	6
Core	246768	Split a tractor	Level 2	3
Core	13117	Install, test and maintain a basic hydraulic system	Level 3	10
Elective	13159	Care for, select and use hand and measuring tools	Level 1	4
Elective	116932	Operate a personal computer system	Level 1	3
Elective	246764	Cut and form sheet metal to specifications	Level 2	8

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	243067	Cut materials using the oxy-fuel gas cutting process (manual cutting)	Level 2	6
Elective	13205	Operate and monitor a lathe to produce simple components	Level 2	12
Elective	119737	Perform basic Spray Painting	Level 2	10
Elective	119753	Perform basic welding/joining of metals	Level 2	8
Elective	12476	Select, use and care for engineering measuring equipment	Level 2	4
Elective	12219	Select, use and care for engineering power tools	Level 2	6
Elective	116937	Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets	Level 2	4
Elective	117924	Use a Graphical User Interface (GUI)-based word processor to format documents	Level 2	5
Elective	116945	Use electronic mail to send and receive messages	Level 2	2
Elective	8000	Apply basic business principles	Level 3	9
Fundamental	119463	Access and use information from texts	Level 2	5
Fundamental	9009	Apply basic knowledge of statistics and probability to influence the use of data and procedures in order to investigate life related problems	Level 2	3
Fundamental	7480	Demonstrate understanding of rational and irrational numbers and number systems	Level 2	3
Fundamental	9008	Identify, describe, compare, classify, explore shape and motion in 2-and 3-dimensional shapes in different contexts	Level 2	3
Fundamental	119454	Maintain and adapt oral/signed communication	Level 2	5
Fundamental	119460	Use language and communication in occupational learning programmes	Level 2	5
Fundamental	7469	Use mathematics to investigate and monitor the financial aspects of personal and community life	Level 2	2
Fundamental	9007	Work with a range of patterns and functions and solve problems	Level 2	5
Fundamental	119456	Write/present for a defined context	Level 2	5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Overhaul minor engine system components on agricultural equipment***

SAQA US ID	UNIT STANDARD TITLE		
246759	Overhaul minor engine system components on agricultural equipment		
ORIGINATOR		PROVIDER	
SGB for Secondary Agriculture: Processing			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Secondary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1

Prepare to overhaul an engine system component.

SPECIFIC OUTCOME 2

Disassemble the minor engine system component.

SPECIFIC OUTCOME 3

Identify malfunctioning or worn parts and secure the correct replacement parts.

SPECIFIC OUTCOME 4

Reassemble the engine system component.

SPECIFIC OUTCOME 5

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Remove, dismantle and install drive train components of agricultural equipment***

SAQA US ID	UNIT STANDARD TITLE		
246760	Remove, dismantle and install drive train components of agricultural equipment		
ORIGINATOR		PROVIDER	
SGB for Secondary Agriculture: Processing			
FIELD	SUBFIELD		
1 - Agriculture and Nature Conservation	Secondary Agriculture		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	8

SPECIFIC OUTCOME 1

Prepare to remove, disassemble and install a component.

SPECIFIC OUTCOME 2

Remove and disassemble the component.

SPECIFIC OUTCOME 3

Install the component after repair.

SPECIFIC OUTCOME 4

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Conduct a scheduled service on agricultural equipment***

SAQA US ID	UNIT STANDARD TITLE		
246761	Conduct a scheduled service on agricultural equipment		
ORIGINATOR	PROVIDER		
SGB for Secondary Agriculture: Processing			
FIELD	SUBFIELD		
1 - Agriculture and Nature Conservation	Secondary Agriculture		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1

Prepare to conduct a scheduled service.

SPECIFIC OUTCOME 2

Perform the scheduled service.

SPECIFIC OUTCOME 3

Conduct standard operational inspections and tests.

SPECIFIC OUTCOME 4

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remove, disassemble and install engine system components of agricultural equipment

SAQA US ID	UNIT STANDARD TITLE		
246762	Remove, disassemble and install engine system components of agricultural equipment		
ORIGINATOR		PROVIDER	
SGB for Secondary Agriculture: Processing			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Secondary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

SPECIFIC OUTCOME 1

Prepare to remove, disassemble and install a component.

SPECIFIC OUTCOME 2

Remove and disassemble the component.

SPECIFIC OUTCOME 3

Install the component after repair.

SPECIFIC OUTCOME 4

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Cut and form sheet metal to specifications***

SAQA US ID	UNIT STANDARD TITLE		
246764	Cut and form sheet metal to specifications		
ORIGINATOR			PROVIDER
SGB for Secondary Agriculture: Processing			
FIELD	SUBFIELD		
1 - Agriculture and Nature Conservation	Secondary Agriculture		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	8

SPECIFIC OUTCOME 1

Select the appropriate sheet metal.

SPECIFIC OUTCOME 2

Cut sheet metal.

SPECIFIC OUTCOME 3

Form/bend sheet metal.

SPECIFIC OUTCOME 4

Finish the item to specification.

SPECIFIC OUTCOME 5

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Overhaul minor drive train components on agricultural equipment***

SAQA US ID	UNIT STANDARD TITLE		
246765	Overhaul minor drive train components on agricultural equipment		
ORIGINATOR	PROVIDER		
SGB for Secondary Agriculture: Processing			
FIELD	SUBFIELD		
1 - Agriculture and Nature Conservation	Secondary Agriculture		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1

Prepare to overhaul a minor drive train component.

SPECIFIC OUTCOME 2

Disassemble the minor drive train component.

SPECIFIC OUTCOME 3

Identify malfunctioning or worn parts and secure the correct replacement parts.

SPECIFIC OUTCOME 4

Reassemble the minor drive train component.

SPECIFIC OUTCOME 5

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Overhaul steering system components on agricultural equipment***

SAQA US ID	UNIT STANDARD TITLE		
246767	Overhaul steering system components on agricultural equipment		
ORIGINATOR		PROVIDER	
SGB for Secondary Agriculture: Processing			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Secondary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1

Prepare to overhaul a steering system component.

SPECIFIC OUTCOME 2

Disassemble the steering system component.

SPECIFIC OUTCOME 3

Identify malfunctioning or worn parts and secure the correct replacement parts.

SPECIFIC OUTCOME 4

Reassemble the steering system component.

SPECIFIC OUTCOME 5

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:*Split a tractor*

SAQA US ID		UNIT STANDARD TITLE	
246768		Split a tractor	
ORIGINATOR		PROVIDER	
SGB for Secondary Agriculture: Processing			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Secondary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

SPECIFIC OUTCOME 1

Prepare to split a tractor.

SPECIFIC OUTCOME 2

Prepare the tractor for splitting.

SPECIFIC OUTCOME 3

Split a tractor.

SPECIFIC OUTCOME 4

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Remove, dismantle and install hydraulic system components of agricultural equipment

SAQA US ID	UNIT STANDARD TITLE		
246769	Remove, dismantle and install hydraulic system components of agricultural equipment		
ORIGINATOR		PROVIDER	
SGB for Secondary Agriculture: Processing			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Secondary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	6

SPECIFIC OUTCOME 1

Prepare to remove, disassemble and install a component.

SPECIFIC OUTCOME 2

Remove and disassemble the component.

SPECIFIC OUTCOME 3

Install the component after repair.

SPECIFIC OUTCOME 4

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Overhaul breaking system components on agricultural equipment***

SAQA US ID	UNIT STANDARD TITLE		
246770	Overhaul breaking system components on agricultural equipment		
ORIGINATOR		PROVIDER	
SGB for Secondary Agriculture: Processing			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Secondary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1

Prepare to overhaul a breaking system component.

SPECIFIC OUTCOME 2

Disassemble the breaking system component.

SPECIFIC OUTCOME 3

Identify malfunctioning or worn parts and secure the correct replacement parts.

SPECIFIC OUTCOME 4

Reassemble the breaking system component.

SPECIFIC OUTCOME 5

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Care for and maintain electrical components of agricultural equipment**

SAQA US ID	UNIT STANDARD TITLE		
246771	Care for and maintain electrical components of agricultural equipment		
ORIGINATOR	PROVIDER		
SGB for Secondary Agriculture: Processing			
FIELD	SUBFIELD		
1 - Agriculture and Nature Conservation	Secondary Agriculture		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	10

SPECIFIC OUTCOME 1

Demonstrate a basic knowledge and understanding of DC electrical principles.

SPECIFIC OUTCOME 2

Apply knowledge of basic DC electrics.

SPECIFIC OUTCOME 3

Conduct basic tests on DC electrical systems.

SPECIFIC OUTCOME 4

Care for and maintain electrical components.

SPECIFIC OUTCOME 5

Care for and maintain batteries.

SPECIFIC OUTCOME 6

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Overhaul electrical system components on agricultural equipment***

SAQA US ID	UNIT STANDARD TITLE		
246772	Overhaul electrical system components on agricultural equipment		
ORIGINATOR	PROVIDER		
SGB for Secondary Agriculture: Processing			
FIELD	SUBFIELD		
1 - Agriculture and Nature Conservation	Secondary Agriculture		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

SPECIFIC OUTCOME 1

Prepare to overhaul a electrical system component.

SPECIFIC OUTCOME 2

Disassemble the electrical system component.

SPECIFIC OUTCOME 3

Identify malfunctioning or worn parts and secure the correct replacement parts.

SPECIFIC OUTCOME 4

Reassemble the electrical system component.

SPECIFIC OUTCOME 5

Keep the workplace safe and productive.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Overhaul minor hydraulic components on agricultural equipment***

SAQA US ID	UNIT STANDARD TITLE		
251923	Overhaul minor hydraulic components on agricultural equipment		
ORIGINATOR		PROVIDER	
SGB for Secondary Agriculture: Processing			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Secondary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	8

SPECIFIC OUTCOME 1

Prepare to overhaul a minor hydraulic component.

SPECIFIC OUTCOME 2

Disassemble the minor hydraulic component.

SPECIFIC OUTCOME 3

Identify malfunctioning or worn parts and secure the correct replacement parts.

SPECIFIC OUTCOME 4

Reassemble the minor hydraulic component.

SPECIFIC OUTCOME 5

Keep the workplace safe and productive.