No. 1063 **10 September 2004**

Established in terms of Act 58 of 1995

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

Manufacturing and Assembly Processes

Registered by NSB 06, Manufacturing, Engineering and Technology, publishes the following unit standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the unit standard. The unit standard 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, Hatfield Forum West, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 09 October 2004.*** All correspondence should be marked **Standards Setting – Manufacturing and Assembly Processes SGB** 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.co.za

DUGMORE MPHUTHING
ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Diploma: Master Craftsmanship (Electrical)

SAQA QUAL ID	*QUALIFICATION TITLE*		
49059	National Diploma: Master Craftsmanship (Electrical)		
SGB NAME	SGB Manufacturing and Assembly Processes		
NSB ACRONYM	*PROVIDER NAME*		
NSB 06			
QUAL TYPE	*FIELD*		*SUBFIELD*
National Certificate	Manufacturing, Engineering and Technology		Engineering and Related Design
ABET BAND	*MINIMUM CREDITS*	*NQF LEVEL*	*QUALIFICATION CLASS*
Undefined	253	Level 5	Regular-Unit Stds Based

PURPOSE OF THE QUALIFICATION

Why do we need a master craftsmanship qualification?
South Africa has a critical shortage of skilled practitioners in most technical occupations. A strong cadre of master artisans and craftspeople would have a significant impact on the ability of South African industry to build on the improved financial environment and create sustainable economic growth.
Many of those who took on this role originally came from overseas in the 1960's and 1970's. This generation of technically proficient people has by now either moved on to higher positions, retired, been retrenched, or is approaching retirement age. The reduction in the number of apprentices, from approximately 25 000 per annum in 1985 to approximately 5000 in 2002, has substantially reduced the pool of skilled people. Those apprentices have also been further reduced by emigration as the result of economic conditions locally and active recruiting by overseas countries.

The decline in the number of people taking up practical and technical occupations has meant that many such functions are performed by superficially trained workers and those gravitating to the work through

redeployment and retrenchment. This has resulted in a significant reduction in the quality of workmanship and levels of service. Large organisations report that up to 70% of the work being done during annual maintenance shutdowns has to be redone (so called re-work). Some component manufacturers, for instance, have found it easier to order their tooling from Portugal:
> Delivery was quicker and more reliable
> The quality was better
> It was more cost-effective.
The master craftsmanship series of qualifications could be used to improve those very aspects (quality, quick delivery and cost-effectiveness) to create sustainable economic activity. The qualifications would also give past and current artisans and craftspeople a way of having their skills recognized and targeted to the needs of the economy. For industry, these skills would fill the gap between engineering design and shop floor operations; and between new systems and technological concepts, and practical implementation.

The National Training Board investigation into the apprenticeship system in 1986 revealed that the category of persons most likely to succeed in a new business start-up were artisans and craftspeople. The decline in the number of artisans and craftspeople emerging from the training system has had a significant impact on the number of people who could successfully start up new businesses to provide general or specialised practical services to the industry or the public. This in turn has had a negative impact on economic growth and ultimately on employment opportunities. A further benefit of the master craftsmanship projects would be to assist new business start-ups to have a greater chance of success.

Experienced artisans and craftspeople also played a role in developing the next generation of people in the occupation. The apprenticeship system in its strongest form was built on the transfer of knowledge and expertise from the artisans and craftspeople to the apprentices. A further function of master craftsmanship is to transfer skills, knowledge and values. This role will support the quality assurance of apprenticeship and learnership systems, ensuring the development of people with high quality and relevant skills, knowledge and values.

This and related qualifications will act as a framework for providers, assessors and learners to plan, implement and measure the outcomes of suitable learning programmes, or the recognition of prior learning, in this new discipline.

The specific purpose of this qualification, the second in the series, represents the skills, knowledge and understanding required by competent practitioners to:
> Apply occupation-related knowledge and practical experience to develop new programmes, products or services
> Understand and apply relevant theory and knowledge, Mathematics, Statistics and Drawing included

> Manage the resources in a section, department, business unit or small enterprise
> Manage quality of products, services and materials
> Develop learners in the small enterprise or business unit.

This qualification is conceptualised as a generic qualification that can be used for a wide range of trades and technical and service occupations. However, current SAQA regulations do not permit the registration of generic qualifications. This qualification will, therefore, initially be focused only on electrical trades and occupations. This qualification can be obtained in the context of a variety of electrical, maintenance, installation and manufacturing processes.

This qualification together with the National Certificate and the National First Degree in Master Craftsmanship are conceptualised as an integrated set of building blocks. The credits for the National Certificate qualification are required to fulfil all the requirements for this National Diploma. The credits for this National Diploma will, in turn, be required to fulfil the requirements of the National First Degree in Master Craftsmanship.

Rationale for the qualification:
The concept of master craftsmanship represents a career path for people involved in practical and technical occupations. While the development of the Master Craftsmanship qualifications will initially use the traditional trades as a basis, the career path is equally appropriate for a range of other occupations, both for traditional occupations as well as for new occupations emerging as the result of changing technology.
In South Africa there was previously no formal career path for artisans and craftspeople once they had acquired the initial trade qualification. Either they:
> Took on a managerial role via positions such as foreman or supervisor,
> Developed their theoretical knowledge via n3 - n6 and combined that with progressively more technical roles,
> In isolated cases they continued via national diplomas and university degrees to become engineers, or they
> Established their own businesses.
The proposed series of master craftsmanship qualifications combines aspects of these career options into a fully-fledged qualification pathway, allowing master craftspeople to perform a variety of roles within industry or in the economy.
The primary roles of master artisans or craftspeople are:
> Custodian of technology, ie solving problems, developing solutions, developing new products or services, introducing new technology, machinery, equipment or services
> Custodian of quality, ie setting and maintaining standards of service and workmanship, acting as a role

model for new entrants, applying quality as a strategic objective
> Manager of a sustainable small or medium company or a business unit, ie managing resources, costing, estimating, scheduling, balancing workflow
> Education, training and development practitioner, ie transferring skills and knowledge, coaching, mentoring, facilitating the learning and assessing of the staff and learners or apprentices.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

The credits and the related unit standards assume that the learner is either formally qualified in an NQF Level 5 Certificate in Master Craftsmanship or has extensive experience in the installation, repair, maintenance or manufacture of electrical equipment, components and control systems and has some experience with instrumentation. If a learner does not have such experience or qualifications, the learning time will be increased.

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

QUALIFICATION RULES

N/A

EXIT LEVEL OUTCOMES

The exit level outcomes for this qualification reflect a combination of specific outcomes and critical cross-field education and training outcomes. The way in which the critical outcomes have been advanced through the learning required for this qualification is embedded in the way in which the unit standards have been constructed. Critical outcomes form the basis of acquiring the skills and knowledge and values. The application of these in a specific context results in the achievement of specific outcomes. The integration of specific outcomes from a variety of unit standards results in the ability to achieve the exit level outcomes

1. Provide products and services which meet or exceed customer expectations
2. Develop and achieve key performance indicators for the section or the contractors
3. Resolve disputes, conflicts and grievances in the workplace
4. Maintain and improve systems, procedures and processes to enhance the quality and safety of work

processes and practices
5. Facilitate and assess learning in the workplace

ASSOCIATED ASSESSMENT CRITERIA

1.
> Markets and customer needs and expectations are investigated and recorded
> Products or services to meet customer expectations are adapted and evaluated
> Resources for adapted product or service are planned, obtained and used
> Appropriate and effective technical solution is used in the development of the adapted product or service
> Choice of the technical solution is based on a thorough knowledge of options

2.
> Sustainability, effectiveness and efficiencies of the enterprise or business unit are maintained or improved
> Appropriate key performance indicators are chosen for own work and for work of contractors
> Plans to meet key performance indicators are developed, implemented and evaluated

3.
> Conflict, dispute and grievance handling procedures and tactics are explained and applied
> Team spirit is developed and maintained, and is contributing to the achievement of the production or service delivery targets
> Dispute, discipline and grievance handling procedures comply with labour legislation

4.
> A safety, health, environmental and quality management system is reviewed and changes are implemented
> The safety, health, environmental and quality management system is supported by awareness and training programmes
> The workplace is kept safe, free of hazards, and is friendly to the environment
> Workplace practices and procedures support safety, health, the environment and enhanced quality

5.
> Workplace performance is improved through training
> Appropriate methodologies are selected and applied for different learning needs and various forms of assessment
> Records of training plans, training interventions and assessments are accurate and up-to-date

> Training and assessment meets generally accepted criteria and guidelines

Integrated Assessment:
The integrated assessment must be based on a summative assessment guide. The guide must spell out how the assessor will assess different aspects of the performance and will include:
> Evaluating evidence in a portfolio of evidence, particularly projects which integrate various aspects of the qualification and which demonstrate the integration of all aspects of learning: fundamental and core; knowledge and skills and values; the development of the critical outcomes
> Observing and listening to the learner at work, both in primary activities as well as in other interactions, or in relevant simulations
> Asking questions and initiating short discussions to test understanding and to verify other evidence
> Looking at records and reports.

The learner may choose in which language he/she wants to be assessed. This should be established as part of a process of preparing the learner for assessment and familiarising the learner with the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be presented if pertinent to any of the exit level outcomes.

The assessment process should cover the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities. The assessment process should also establish how the learning process has advanced the critical outcomes.

Assessors should also evaluate evidence that the learner has been performing consistently over a period of time.

INTERNATIONAL COMPARABILITY

The best-known master qualifications are those in German-speaking countries. The master qualifications are a requirement within these countries for:
> Opening and running a small business
> Training apprentices/learners
> Registration with local chambers of business and commerce.
The German system is however different and there is no qualification framework like the NQF. The master qualification is a single qualification and can only be acquired based on the following:
> Five - eight years of practical experience in the trade
> Three years of part time classes and successfully passing the examinations

> The completion of a master piece

The master qualifications in other countries such as the United Kingdom and New Zealand focus primarily on advanced technical skills and knowledge.

The development of these qualifications was largely based on the contextualisation of the German qualifications in South Africa. German-qualified master artisans who operate in both small and large companies in South Africa assisted in the process to ensure the qualifications would have the same value as those in German-speaking countries.

ARTICULATION OPTIONS

This qualification has been designed and structured so that qualifying learners can move from one context to another. Employers or institutions should be able to evaluate the outcomes of this qualification against the needs of their context and structure top-up learning appropriately. Equally, holders of other qualifications may be evaluated against this qualification for the purpose of RPL.

Overview of the proposed qualifications pathway and articulation possibilities:
Level----Other Specialisations
7---Engineer-Quality assurance or Education, Training and Development, Technical sales and marketing, General management
6--First Degree Master Craftsmanship-Engineering technologist or equivalent
5--Nat Diploma Master Craftsmanship-Engineering technician or equivalent
5--Nat Certificate Master Craftsmanship
4-NQF technical or supervisory qualification-NQF 4 trade
3-NQF 3 trade

Note: the actual articulation will be determined by the institutional and professional entry requirements. The articulation to engineering qualifications is being explored with the Engineering SGB but has not yet been finalised.

MODERATION OPTIONS

Moderators for the qualification should be qualified and accredited with an appropriate ETQA.
To assure the quality of the assessment process, the moderation should cover the following:
> Assessor credentials
> The assessment instrument

> The assessment process
Moderators should be qualified assessors in their own right.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by the relevant ETQA:
1. Appropriate qualification in the field of electrical engineering, maintenance or manufacture with a minimum of 2 years' experience in a small business environment. The subject matter expertise of the assessor can be established by recognition of prior learning.

2. Appropriate experience and understanding of assessment theory, processes and practices.

3. Good interpersonal skills and ability to balance the conflicting requirements of:
> Maintaining national standards
> The interests of the learner
> The need for transformation and redressing the legacies of the past
> The cultural background and language of the learner.

4. Registration as an assessor with a relevant ETQA.
5. Any other criteria required by a relevant ETQA.

Since this is a new field, it may be some time before there are sufficient qualified assessors. The relevant ETQAs should allow interim arrangements to be made. It is envisaged that holders of this and related qualifications will eventually form a professional association. The members of this association will then support the quality assurance and assessment processes. Assessors would then be required to be registered members of this association.

NOTES

N/A

UNIT STANDARDS
(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

	UNIT STANDARD ID AND TITLE	*LEVEL*	*CREDITS*	*STATUS*
Core	13942 Demonstrate a basic understanding of the role of a business strategy in managing a small business or a business unit	Level 4	5	Registered
Core	10043 Develop, implement and manage a project / activity plan	Level 5	5	Registered

Core	14214	Evaluate and improve the project team's performance	Level 5	8	Registered
Core	15224	Empower team members through recognising strengths, encouraging participation in decision making and delegating tasks	Level 5	4	Registered
Core	15237	Build teams to meet set goals and objectives	Level 5	3	Registered
Core	116779	Develop and implement specifications to achieve the desired product or service	Level 5	10	Draft - Prep for P Comment
Core	116781	Develop and implement sustainable processes and procedures	Level 5	10	Draft - Prep for P Comment
Core	116783	Analyse trends and implement continuous improvements	Level 5	10	Draft - Prep for P Comment
Core	116785	Manage requirements related to quality and other standards	Level 5	10	Draft - Prep for P Comment
Core	116787	Plan, monitor and control the financial resources for a small company or business unit	Level 5	10	Draft - Prep for P Comment
Elective	114884	Co-ordinate the improvement of productivity within a functional unit	Level 4	8	Registered
Elective	7978	Plan and conduct assessment of learning outcomes	Level 5	15	Reregistered
Elective	14803	Facilitate Technical/Practical skills learning to adult learners	Level 5	20	Registered
Elective	15229	Implement codes of conduct in the team, department or division	Level 5	3	Registered
Elective	114716	Manage installation and maintenance contractors	Level 5	16	Registered
Fundamental	114600	Apply innovative thinking to the development of a small business	Level 4	4	Registered
Fundamental	15215	Identify and interpret Best Practice guidelines, and plan for and implement Best Practice within the team, department or division	Level 5	4	Registered
Fundamental	15231	Create and use a range of resources to effectively manage teams, sections, departments or divisions	Level 5	4	Registered
Fundamental	15234	Apply efficient time management to the work of a department/division/section	Level 5	4	Registered
Fundamental	15238	Devise and apply strategies to establish and maintain relationships	Level 5	3	Registered

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Degree: Master Craftsmanship (Electrical)

SAQA QUAL ID	*QUALIFICATION TITLE*		
49060	National Degree: Master Craftsmanship (Electrical)		
SGB NAME	SGB Manufacturing and Assembly Processes		
NSB ACRONYM	*PROVIDER NAME*		
NSB 06			
QUAL TYPE	*FIELD*		*SUBFIELD*
National First Degree	Manufacturing, Engineering and Technology		Engineering and Related Design
ABET BAND	*MINIMUM CREDITS*	*NQF LEVEL*	*QUALIFICATION CLASS*
Undefined	418	Level 6	Regular-Unit Stds Based

PURPOSE OF THE QUALIFICATION

Why do we need a master craftsmanship qualification?

South Africa has a critical shortage of skilled practitioners in most technical occupations. A strong cadre of master artisans and craftspeople would have a significant impact on the ability of South African industry to build on the improved financial environment and create sustainable economic growth.
Many of those who took on this role originally came from overseas in the 1960's and 1970's. This generation of technically proficient people has by now either moved on to higher positions, retired, been retrenched, or is approaching retirement age. The reduction in the number of apprentices, from approximately 25 000 per annum in 1985 to approximately 5000 in 2002, has substantially reduced the pool of skilled people. Those apprentices have also been further reduced by emigration as the result of economic conditions locally and active recruiting by overseas countries.

The decline in the number of people taking up practical and technical occupations has meant that many

such functions are performed by superficially trained workers and those gravitating to the work through redeployment and retrenchment. This has resulted in a significant reduction in the quality of workmanship and levels of service. Large organisations report that up to 70% of the work being done during annual maintenance shutdowns has to be redone (so called re-work). Some component manufacturers, for instance, have found it easier to order their tooling from Portugal:
> Delivery was quicker and more reliable.
> The quality was better.
> It was more cost-effective.
The master craftsmanship series of qualifications could be used to improve those very aspects (quality, quick delivery and cost-effectiveness) to create sustainable economic activity. The qualifications would also give past and current artisans and craftspeople a way of having their skills recognized and targeted to the needs of the economy. For industry, these skills would fill the gap between engineering design and shop floor operations; and between new systems and technological concepts, and practical implementation.

The National Training Board investigation into the apprenticeship system in 1986 revealed that the category of persons most likely to succeed in a new business start-up were artisans and craftspeople. The decline in the number of artisans and craftspeople emerging from the training system has had a significant impact on the number of people who could successfully start up new businesses to provide general or specialised practical services to the industry or the public. This in turn has had a negative impact on economic growth and ultimately on employment opportunities. A further benefit of the master craftsmanship projects would be to assist new business start-ups to have a greater chance of success.

Experienced artisans and craftspeople also played a role in developing the next generation of people in the occupation. The apprenticeship system in its strongest form was built on the transfer of knowledge and expertise from the artisans and craftspeople to the apprentices. A further function of master craftsmanship is to transfer skills, knowledge and values. This role will support the quality assurance of apprenticeship and learnership systems, ensuring the development of people with high quality and relevant skills, knowledge and values.

This and related qualifications will act as a framework for providers, assessors and learners to plan, implement and measure the outcomes of suitable learning programmes, or the recognition of prior learning, in this new discipline.

The specific purpose of this qualification, the third in the series, represents the skills, knowledge and understanding required by competent practitioners to:
> Use a high level of technical expertise to develop new products or services.
> Understand and apply relevant theory and knowledge, Mathematics, Statistics and Drawing included.

> Run a sustainable business unit or small enterprise.
> Upgrade the quality of products, services and materials.
> Transfer skills and knowledge to develop the next generation of people in that occupation.

This qualification is conceptualised as a generic qualification that can be used for a wide range of trades and technical and service occupations. However, current SAQA regulations do not permit the registration of generic qualifications. This qualification will, therefore, initially be focused only on electrical trades and occupations. This qualification can be obtained in the context of a variety of electrical, maintenance, installation and manufacturing processes.

This qualification together with the National Certificate and the National Diploma in Master Craftsmanship are conceptualised as an integrated set of building blocks. The credits for the National Diploma qualification are required to fulfil all the requirements for this National First Degree.

Rationale for the qualification:

The concept of master craftsmanship represents a career path for people involved in practical and technical occupations. While the development of the Master Craftsmanship qualifications will initially use the traditional trades as a basis, the career path is equally appropriate for a range of other occupations, both for traditional occupations as well as for new occupations emerging as the result of changing technology.
In South Africa there was previously no formal career path for artisans and craftspeople once they had acquired the initial trade qualification. Either they:
> Took on a managerial role via positions such as foreman or supervisor.
> Developed their theoretical knowledge via N3 - N6 and combined that with progressively more technical roles.
> In isolated cases they continued via national diplomas and university degrees to become engineers, or they
> Established their own businesses.
The proposed series of master craftsmanship qualifications combines aspects of these career options into a fully-fledged qualification pathway, allowing master craftspeople to perform a variety of roles within industry or in the economy.

The primary roles of master artisans or craftspeople are:
1. Custodian of technology, ie solving problems, developing solutions, developing new products or services, introducing new technology, machinery, equipment or services.
2. Custodian of quality, ie setting and maintaining standards of service and workmanship, acting as a role

model for new entrants, applying quality as a strategic objective.
3. Manager of a sustainable small or medium company or a business unit, ie managing resources, costing, estimating, scheduling, balancing workflow.
4. Education, training and development practitioner, ie transferring skills and knowledge, coaching, mentoring, facilitating the learning and assessing of the staff and learners or apprentices.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

The credits and the related unit standards assume that the learner is either formally qualified in an NQF Level 5 Diploma in Master Craftsmanship or has extensive experience in the installation, repair, maintenance or manufacture of electrical equipment, components and control systems and has some experience with instrumentation. If a learner does not have such experience or qualifications, the learning time will be increased.

Recognition of prior learning:

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

QUALIFICATION RULES

EXIT LEVEL OUTCOMES

The exit level outcomes for this qualification reflect a combination of specific outcomes and critical cross-field education and training outcomes. The way in which the critical outcomes have been advanced through the learning required for this qualification is embedded in the way in which the unit standards have been constructed. Critical outcomes form the basis of acquiring the skills and knowledge and values. The application of these in a specific context results in the achievement of specific outcomes. The integration of specific outcomes from a variety of unit standards results in the ability to achieve the exit level outcomes

1. Apply technology to the development of a new product, service or material (the master piece).
2. Manage an enterprise or business unit, the people and the processes related to the occupation.
3. Develop and implement strategies which respond to changing customer or market needs and issues of

quality, safety, health and the environment.
4. Develop competent practitioners in his or her occupation and in related support functions.

ASSOCIATED ASSESSMENT CRITERIA

1.
> New product, service or material is an improvement on existing solutions or a response to a new need or market opportunity.
> Technology and technical options are evaluated and adapted to new product, service or material.
> Performance and quality criteria are developed and the new product, service or material is designed, built or implemented and evaluated against these criteria.
> The new product, service or material is cost effective and is marketable.

2.
> The enterprise or business unit is sustainable and productive.
> All resources, including human resources, are optimally utilised.
> The quality of the products or service is maintained or enhanced.
> Effective systems support business and technical processes.

3.
> Changes in the technology and markets are evaluated and their potential impact on the business is evaluated.
> Business is appropriately positioned and resourced in order to respond to changes or to implement growth strategies.
> Safety, health, environmental and quality considerations form part of the organisational strategy.

4.
> Appropriate strategy, plans and programmes are in place to develop competent practitioners.
> Applicable incentives and grants are accessed to support the development processes.
> Strategies, including retention strategies, and plans reflect an analysis of scarce skills, future needs and technical and business requirements.
> Learning process and programmes are continuously evaluated.
> Learners are supported and nurtured.

Integrated Assessment:

The integrated assessment must be based on a summative assessment guide. The guide must spell out

how the assessor will assess different aspects of the performance and will include:
> Evaluating evidence in a portfolio of evidence, particularly projects which integrate various aspects of the qualification and which demonstrate the integration of all aspects of learning: fundamental and core; knowledge and skills and values; the development of the critical outcomes
> Observing and listening to the learner at work, both in primary activities as well as in other interactions, or in relevant simulations
> Asking questions and initiating short discussions to test understanding and to verify other evidence
> Looking at records and reports.

The learner may choose in which language he/she wants to be assessed. This should be established as part of a process of preparing the learner for assessment and familiarising the learner with the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be presented if pertinent to any of the exit level outcomes.

The assessment process should cover the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities. The assessment process should also establish how the learning process has advanced the critical outcomes.

Assessors should also evaluate evidence that the learner has been performing consistently over a period of time.

INTERNATIONAL COMPARABILITY

The best-known master qualifications are those in German-speaking countries. The master qualifications are a requirement within these countries for:
> Opening and running a small business.
> Training apprentices/learners.
> Registration with local chambers of business and commerce.

The German system is however different and there is no qualification framework like the NQF. The master qualification is a single qualification and can only be acquired based on the following:
1. Five - eight years of practical experience in the trade.
2. Three years of part time classes and successfully passing the examinations.
3. The completion of a master piece.

The master qualifications in other countries such as the United Kingdom and New Zealand focus primarily

on advanced technical skills and knowledge.

The development of these qualifications was largely based on the contextualisation of the German qualifications in South Africa. German-qualified master artisans who operate in both small and large companies in South Africa assisted in the process to ensure the qualifications would have the same value as those in German-speaking countries.

ARTICULATION OPTIONS

This qualification has been designed and structured so that qualifying learners can move from one context to another. Employers or institutions should be able to evaluate the outcomes of this qualification against the needs of their context and structure top-up learning appropriately. Equally, holders of other qualifications may be evaluated against this qualification for the purpose of RPL.

Overview of the proposed qualifications pathway and articulation possibilities:
NQF level----Other Specialisations
7---Engineer-Quality assurance or Education, Training and Development, Technical sales and marketing, General management
6--First Degree Master Craftsmanship-Engineering technologist or equivalent-
5--Nat Diploma Master Craftsmanship-Engineering technician or equivalent-
5--Nat Certificate Master Craftsmanship--
4-NQF technical or supervisory qualification-NQF 4 trade--
3-NQF 3 trade---

Note: the actual articulation will be determined by the institutional and professional entry requirements. The articulation to engineering qualifications is being explored with the Engineering SGB but has not yet been finalised.

MODERATION OPTIONS

Moderators for the qualification should be qualified and accredited with an appropriate ETQA.
To assure the quality of the assessment process, the moderation should cover the following:
> Assessor credentials.
> The assessment instrument.
> The assessment process.
Moderators should be qualified assessors in their own right.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by the relevant ETQA:
1. Appropriate qualification in the field of electrical engineering, maintenance or manufacture with a minimum of 2 years' experience in a small business environment. The subject matter expertise of the assessor can be established by recognition of prior learning.
2. Appropriate experience and understanding of assessment theory, processes and practices.
3. Good interpersonal skills and ability to balance the conflicting requirements of:
> Maintaining national standards.
> The interests of the learner.
> The need for transformation and redressing the legacies of the past.
> The cultural background and language of the learner.
4. Registration as an assessor with a relevant ETQA.
5. Any other criteria required by a relevant ETQA.

Since this is a new field, it may be some time before there are sufficient qualified assessors. The relevant ETQAs should allow interim arrangements to be made. It is envisaged that holders of this and related qualifications will eventually form a professional association. The members of this association will then support the quality assurance and assessment processes. Assessors would then be required to be registered members of this association.

NOTES

UNIT STANDARDS
(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

	UNIT STANDARD ID AND TITLE		LEVEL	CREDITS	STATUS
Core	12999	Contribute to the management of costs and the enhancement of value	Level 5	10	Registered
Core	15220	Set, monitor and measure the achievement of goals and objectives for a team, department or division within an organisation	Level 5	4	Registered
Core	7888	Monitor staff performance	Level 6	5	Reregistered
Core	10604	Manage skills, training and development within a team in a manufacturing unit	Level 6	8	Registered
Core	10608	Manage a quality assurance system in a sensitive consumer product manufacturing environment	Level 6	9	Registered
Core	116780	Ensure compliance with legal provisions, regulations and standards	Level 6	12	Draft - Prep for P Comment

Core	116784	Design, prototype, test and refine products or services	Level 6	20	Draft - Prep for P Comment
Core	116788	Develop and implement a manufacturing, installation or service plan	Level 6	10	Draft - Prep for P Comment
Core	116789	Identify a gap in the market and propose solutions	Level 6	15	Draft - Prep for P Comment
Core	116792	Evaluate the financial implications of changes to sustain future growth of small or medium business or autonomous business unit	Level 6	10	Draft - Prep for P Comment
Elective	12674	Perform auditing activities	Level 5	12	Registered
Elective	114926	Develop plans for implementing Learnerships and Skills Programmes within a learning organisation	Level 6	5	Registered
Fundamental	10049	Identify financial implications for making decisions	Level 5	8	Registered
Fundamental	15216	Create opportunities for innovation and lead projects to meet innovative ideas	Level 5	4	Registered
Fundamental	15219	Develop and implement a strategy and action plans for a team, department or division	Level 5	4	Registered
Fundamental	7887	Develop and Manage Marketing Plans and Strategies	Level 6	12	Registered
Fundamental	14505	Apply the principles of ethics and professionalism to a business environment	Level 6	6	Registered
Fundamental	14510	Demonstrate knowledge and insight into the impact of HIV/AIDS on financial products, markets and the workforce	Level 6	6	Registered

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Master Craftsmanship (Electrical)

SAQA QUAL ID	*QUALIFICATION TITLE*		
49061	National Certificate: Master Craftsmanship (Electrical)		
SGB NAME	SGB Manufacturing and Assembly Processes		
NSB ACRONYM	*PROVIDER NAME*		
NSB 06			
QUAL TYPE	*FIELD*		*SUBFIELD*
National Certificate	Manufacturing, Engineering and Technology		Engineering and Related Design
ABET BAND	*MINIMUM CREDITS*	*NQF LEVEL*	*QUALIFICATION CLASS*
Undefined	121	Level 5	Regular-Unit Stds Based

PURPOSE OF THE QUALIFICATION

Why do we need a master craftsmanship qualification?
South Africa has a critical shortage of skilled practitioners in most technical occupations. A strong cadre of master artisans and craftspeople would have a significant impact on the ability of South African industry to build on the improved financial environment and create sustainable economic growth.
Many of those who took on this role originally came from overseas in the 1960's and 1970's. This generation of technically proficient people has by now either moved on to higher positions, retired, been retrenched, or is approaching retirement age. The reduction in the number of apprentices, from approximately 25 000 per annum in 1985 to approximately 5000 in 2002, has substantially reduced the pool of skilled people. Those apprentices have also been further reduced by emigration as the result of economic conditions locally and active recruiting by overseas countries.

The decline in the number of people taking up practical and technical occupations has meant that many such functions are performed by superficially trained workers and those gravitating to the work through

redeployment and retrenchment. This has resulted in a significant reduction in the quality of workmanship and levels of service. Large organisations report that up to 70% of the work being done during annual maintenance shutdowns has to be redone (so called re-work). Some component manufacturers, for instance, have found it easier to order their tooling from Portugal:
> Delivery was quicker and more reliable
> The quality was better
> It was more cost-effective.
The master craftsmanship series of qualifications could be used to improve those very aspects (quality, quick delivery and cost-effectiveness) to create sustainable economic activity. The qualifications would also give past and current artisans and craftspeople a way of having their skills recognized and targeted to the needs of the economy. For industry, these skills would fill the gap between engineering design and shop floor operations; and between new systems and technological concepts, and practical implementation.

The National Training Board investigation into the apprenticeship system in 1986 revealed that the category of persons most likely to succeed in a new business start-up were artisans and craftspeople. The decline in the number of artisans and craftspeople emerging from the training system has had a significant impact on the number of people who could successfully start up new businesses to provide general or specialised practical services to the industry or the public. This in turn has had a negative impact on economic growth and ultimately on employment opportunities. A further benefit of the master craftsmanship projects would be to assist new business start-ups to have a greater chance of success.

Experienced artisans and craftspeople also played a role in developing the next generation of people in the occupation. The apprenticeship system in its strongest form was built on the transfer of knowledge and expertise from the artisans and craftspeople to the apprentices. A further function of master craftsmanship is to transfer skills, knowledge and values. This role will support the quality assurance of apprenticeship and learnership systems, ensuring the development of people with high quality and relevant skills, knowledge and values.

This and related qualifications will act as a framework for providers, assessors and learners to plan, implement and measure the outcomes of suitable learning programmes, or the recognition of prior learning, in this new discipline.

The specific purpose of this qualification represents the skills, knowledge and understanding required by competent practitioners to:
> Apply occupation-related knowledge and practical experience to enhance products, services or materials
> Understand and co-ordinate the workflow of own section, team or department
> Make effective use of resources

> Understand and apply relevant theory and knowledge, Mathematics, Statistics and Drawing included
> Improve the quality of workmanship, process or service
> Develop the capacity of the team to enhance the performance of the workplace.

This qualification is conceptualised as a generic qualification that can be used for a wide range of trades and technical and service occupations. However, current SAQA regulations do not permit the registration of generic qualifications. This qualification will, therefore, initially be focused only on electrical trades and occupations. This qualification can be obtained in the context of a variety of electrical, maintenance, installation and manufacturing processes.

This qualification together with the National Diploma and the National First Degree in Master Craftsmanship are conceptualised as an integrated set of building blocks. The credits for this National Certificate are required to fulfil the requirements of the National Diploma in Master Craftsmanship.

Rationale for the qualification:

The concept of master craftsmanship represents a career path for people involved in practical and technical occupations. While the development of the Master Craftsmanship qualifications will initially use the traditional trades as a basis, the career path is equally appropriate for a range of other occupations, both for traditional occupations as well as for new occupations emerging as the result of changing technology.
In South Africa there was previously no formal career path for artisans and craftspeople once they had acquired the initial trade qualification. Either they:
> Took on a managerial role via positions such as foreman or supervisor,
> Developed their theoretical knowledge via N3 - N6 and combined that with progressively more technical roles,
> In isolated cases they continued via national diplomas and university degrees to become engineers, or they
> Established their own businesses.
The proposed series of master craftsmanship qualifications combines aspects of these career options into a fully-fledged qualification pathway, allowing master craftspeople to perform a variety of roles within industry or in the economy.
The primary roles of master artisans or craftspeople are:
> Custodian of technology, ie solving problems, developing solutions, developing new products or services, introducing new technology, machinery, equipment or services
> Custodian of quality, ie setting and maintaining standards of service and workmanship, acting as a role model for new entrants, applying quality as a strategic objective

> Manager of a sustainable small or medium company or a business unit, ie managing resources, costing, estimating, scheduling, balancing workflow
> Education, training and development practitioner, ie transferring skills and knowledge, coaching, mentoring, facilitating the learning and assessing of the staff and learners or apprentices.

RECOGNIZE PREVIOUS LEARNING?

N

LEARNING ASSUMED TO BE IN PLACE

The credits and the related unit standards assume that the learner is either formally qualified in an electrical trade at NQF level 4 or has extensive experience in the installation, repair, maintenance or manufacture of electrical equipment, components and control systems and has some experience with instrumentation. If a learner does not have such experience or qualifications, the learning time will be increased.

Recognition of prior learning:

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

QUALIFICATION RULES

N/A

EXIT LEVEL OUTCOMES

The exit level outcomes for this qualification reflect a combination of specific outcomes and critical cross-field education and training outcomes. The way in which the critical outcomes have been advanced through the learning required for this qualification is embedded in the way in which the unit standards have been constructed. Critical outcomes form the basis of acquiring the skills and knowledge and values. The application of these in a specific context results in the achievement of specific outcomes. The integration of specific outcomes from a variety of unit standards results in the ability to achieve the exit level outcomes

1. Produce and adapt products or introduce upgraded equipment or enhanced technology or perform and revise services in response to changing customer requirements or standards.
2. Plan and control the financial affairs of a small business or business unit.
3. Plan and schedule work, and resolve problems and conflicts in the workplace.

4. Evaluate the application of relevant quality, safety, health and environmental standards.
5. Identify skill and knowledge gaps, develop a plan to close the gaps and, where appropriate, coach and assess learners.

ASSOCIATED ASSESSMENT CRITERIA

1.
> The process, product or service meets the planned design requirements (critical)
> The enhanced or revised process, product or service meets required standards (critical)
> Implemented changes are according to planned requirements and are documented (indicator)
> Implemented changes are coordinated with other work-related processes (indicator)

2.
> Financial resources are planned, managed and optimised
> Short term cash flow is managed effectively
> Long term cash flow is managed effectively
> Legal and statutory requirements are met
> Financial resources options are evaluated and selected

3.
> Production schedules are efficient (prioritisation, effective resource utilisation) and are documented
> Progress is monitored, measured and recorded and emerging problems are identified and corrected
> Effectiveness and efficiency of process and the use of resources is tracked and evaluated
> Problems and conflicts are identified, addressed appropriately, resolved and documented

4.
> The relevant standards are known, understood and applied in context
> Changes in procedures and processes are implemented and followed
> Quality manuals are maintained and used appropriately

5.
> Education and training gaps of the team are correctly identified and included in the workplace skills plan
> Learning activities of the team members are co-ordinated and monitored
> Learners are successfully coached and assessed
> Competence declarations are recorded

Integrated Assessment:

The integrated assessment must be based on a summative assessment guide. The guide must spell out how the assessor will assess different aspects of the performance and will include:
> Evaluating evidence in a portfolio of evidence, particularly projects which integrate various aspects of the qualification and which demonstrate the integration of all aspects of learning: fundamental and core; knowledge and skills and values; the development of the critical outcomes
> Observing and listening to the learner at work, both in primary activities as well as in other interactions, or in relevant simulations
> Asking questions and initiating short discussions to test understanding and to verify other evidence
> Looking at records and reports.

The learner may choose in which language he/she wants to be assessed. This should be established as part of a process of preparing the learner for assessment and familiarising the learner with the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be presented if pertinent to any of the exit level outcomes.

The assessment process should cover the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities. The assessment process should also establish how the learning process has advanced the critical outcomes.

Assessors should also evaluate evidence that the learner has been performing consistently over a period of time.

INTERNATIONAL COMPARABILITY

The best-known master qualifications are those in German-speaking countries. The master qualifications are a requirement within these countries for:
> Opening and running a small business
> Training apprentices/learners
> Registration with local chambers of business and commerce.
The German system is however different and there is no qualification framework like the NQF. The master qualification is a single qualification and can only be acquired based on the following:
1. Five - eight years of practical experience in the trade
2. Three years of part time classes and successfully passing the examinations
3. The completion of a master piece

The master qualifications in other countries such as the United Kingdom and New Zealand focus primarily on advanced technical skills and knowledge.

The development of these qualifications was largely based on the contextualisation of the German qualifications in South Africa. German-qualified master artisans who operate in both small and large companies in South Africa assisted in the process to ensure that the qualifications would have the same value as those in German-speaking countries.

ARTICULATION OPTIONS

This qualification has been designed and structured so that qualifying learners can move from one context to another. Employers or institutions should be able to evaluate the outcomes of this qualification against the needs of their context and structure top-up learning appropriately. Equally, holders of other qualifications may be evaluated against this qualification for the purpose of RPL.

Overview of the proposed qualifications pathway and articulation possibilities:
NQF level----Other Specialisations
7---Engineer-Quality assurance or Education, Training and Development, Technical sales and marketing, General management
6--First Degree Master Craftsmanship-Engineering technologist or equivalent-
5--Nat Diploma Master Craftsmanship-Engineering technician or equivalent-
5--Nat Certificate Master Craftsmanship--
4-NQF technical or supervisory qualification-NQF 4 trade--
3-NQF 3 trade---

Note: the actual articulation will be determined by the institutional and professional entry requirements. The articulation to engineering qualifications is being explored with the Engineering SGB but has not yet been finalised.

MODERATION OPTIONS

Moderators for the qualification should be qualified and accredited with an appropriate ETQA.
To assure the quality of the assessment process, the moderation should cover the following:
> Assessor credentials
> The assessment instrument
> The assessment process
Moderators should be qualified assessors in their own right.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by the relevant ETQA:
1. Appropriate qualification in the field of electrical engineering, maintenance or manufacture with a minimum of 2 years' experience in a small business environment. The subject matter expertise of the assessor can be established by recognition of prior learning.
2. Appropriate experience and understanding of assessment theory, processes and practices.
3. Good interpersonal skills and ability to balance the conflicting requirements of:
> Maintaining national standards
> The interests of the learner
> The need for transformation and redressing the legacies of the past
> The cultural background and language of the learner.
4. Registration as an assessor with a relevant ETQA.
5. Any other criteria required by a relevant ETQA.

Since this is a new field, it may be some time before there are sufficient qualified assessors. The relevant ETQAs should allow interim arrangements to be made. It is envisaged that holders of this and related qualifications will eventually form a professional association. The members of this association will then support the quality assurance and assessment processes. Assessors would then be required to be registered members of this association.

NOTES

N/A

UNIT STANDARDS
(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

	UNIT STANDARD ID AND TITLE		*LEVEL*	*CREDITS*	*STATUS*
Core	10327	Provide coaching to personnel within a Contact Centre	Level 4	10	Registered
Core	10294	Identify and respond to learners with special needs and barriers to learning	Level 5	10	Reregistered
Core	15223	Implement training needs for teams and individuals to upgrade skills levels	Level 5	3	Registered
Core	15234	Apply efficient time management to the work of a department/division/section	Level 5	4	Registered
Core	116778	Develop quality plans and ensure overall quality of products or services in a small business or business unit	Level 5	10	Draft - Prep for P Comment
Core	116782	Control logistical flow of components and materials	Level 5	8	Draft - Prep for P Comment

Core	116790	Commission machines and equipment or pilot and test a new technical service	Level 5	10	Draft - Prep for P Comment
Elective	14586	Monitor and control quality control practices in a manufacturing/engineering environment	Level 4	8	Registered
Elective	114880	Measure and improve single factor productivity at a work station	Level 4	8	Registered
Elective	10147	Supervise a project team of a technical project to deliver project objectives	Level 5	14	Registered
Elective	15235	Prepare and conduct staff selection interviews	Level 5	3	Registered
Fundamental	9224	Implement policies regarding HIV/AIDS in the workplace	Level 5	4	Registered
Fundamental	12433	Use communication techniques effectively	Level 5	8	Registered
Fundamental	15225	Identify and interpret related legislation and its impact on the team, department or division and ensure compliance	Level 5	4	Registered
Fundamental	15231	Create and use a range of resources to effectively manage teams, sections, departments or divisions	Level 5	4	Registered
Fundamental	116786	Manage the cash flow of a small business or a business unit	Level 5	10	Draft - Prep for P Comment
Fundamental	116793	Determine the viability of a business and monitor its performance	Level 5	10	Draft - Prep for P Comment

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 1

Analyse trends and implement continuous improvements

SAQA US ID	*UNIT STANDARD TITLE*
116783	Analyse trends and implement continuous improvements

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Gather data based on relevant value chain models.

SPECIFIC OUTCOME 2

Evaluate data of current situation, measure and analyse.

SPECIFIC OUTCOME 3

Identify gaps, plan improvements, brief and prepare team and affected personnel for implementation.

SPECIFIC OUTCOME 4

Implement improvements, and monitor and adjust implementation.

SPECIFIC OUTCOME 5

Complete all documentation and report issues and results.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 2

Commission machines and equipment or pilot and test a new technical service

SAQA US ID	*UNIT STANDARD TITLE*
116790	Commission machines and equipment or pilot and test a new technical service

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Gather all relevant information for commissioning.

SPECIFIC OUTCOME 2

Plan to commission machinery or equipment.

SPECIFIC OUTCOME 3

Commission machines and equipment.

SPECIFIC OUTCOME 4

Handover to relevant personnel, and complete all documentation.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 3

Control logistical flow of components and materials

SAQA US ID	*UNIT STANDARD TITLE*
116782	Control logistical flow of components and materials

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	8

Specific Outcomes:

SPECIFIC OUTCOME 1

Gather information on components and materials (including quantity and time frames).

SPECIFIC OUTCOME 2

Apply logistical flow procedures.

SPECIFIC OUTCOME 3

Analyse effectiveness of the logistical procedures.

SPECIFIC OUTCOME 4

Ensure corrective action is taken.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 4

Determine the viability of a business and monitor its performance

SAQA US ID	*UNIT STANDARD TITLE*
116793	Determine the viability of a business and monitor its performance

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Develop a business strategy, and evaluate the viability of an enterprise or business unit.

SPECIFIC OUTCOME 2

Develop a business plan.

SPECIFIC OUTCOME 3

Monitor performance of business against business plan, identify areas for improvement and implement

SPECIFIC OUTCOME 4

Evaluate opportunities, determine approach and prepare quotations.

SPECIFIC OUTCOME 5

Procure and manage stock.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 5

Develop and implement specifications to achieve the desired product or service

SAQA US ID	*UNIT STANDARD TITLE*
116779	Develop and implement specifications to achieve the desired product or service

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Gather and classify information on activities, material or process for selected product or service.

SPECIFIC OUTCOME 2

Identify potential options for the specification of the product or service and develop the best spec

SPECIFIC OUTCOME 3

Develop or adjust processes and activities to meet the new specification, monitor impact and collect

SPECIFIC OUTCOME 4

Monitor external and internal environment, identify changing requirements and revise specifications

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 6

Develop and implement sustainable processes and procedures

SAQA US ID	*UNIT STANDARD TITLE*
116781	Develop and implement sustainable processes and procedures

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Analyse systems, services or manufacturing processes and identify relevant activities that require p

SPECIFIC OUTCOME 2

Gather and analyse relevant technical data on the applicable systems, services or processes.

SPECIFIC OUTCOME 3

Develop cost effective processes and procedures to ensure sustainability and quality.

SPECIFIC OUTCOME 4

Prepare worksite, implement and refine the processes and related procedures.

SPECIFIC OUTCOME 5

Monitor and evaluate the implementation, compile all documentation and report results, improvements

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 7

Develop quality plans and ensure overall quality of products or services in a small business or business unit

SAQA US ID	*UNIT STANDARD TITLE*
116778	Develop quality plans and ensure overall quality of products or services in a small business or business unit

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Analyse the specifications and the specific site, product or service requirements and develop a qual

SPECIFIC OUTCOME 2

Measure and analyse product aspects against specifications and drawings.

SPECIFIC OUTCOME 3

Inspect and test final product or service for conformance to standards.

SPECIFIC OUTCOME 4

Manage non-conformance of components.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 8

Manage requirements related to quality and other standards

SAQA US ID	*UNIT STANDARD TITLE*
116785	Manage requirements related to quality and other standards

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Manufacturing and Assembly

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Verify that document versions relating to standards are current and that the requirements are unders

SPECIFIC OUTCOME 2

Plan and implement a procedure to verify compliance of current systems and documentation with the ap

SPECIFIC OUTCOME 3

Implement the procedure to verify compliance with standards required, identify non-compliance issues

SPECIFIC OUTCOME 4

Communicate all changes and train all relevant personnel in the new procedures and requirements.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 9

Manage the cash flow of a small business or a business unit

SAQA US ID	*UNIT STANDARD TITLE*
116786	Manage the cash flow of a small business or a business unit

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Control and monitor credit risk.

SPECIFIC OUTCOME 2

Generate invoices and statements and collect debts.

SPECIFIC OUTCOME 3

Receive and deposit payments and capture income.

SPECIFIC OUTCOME 4

Verify, make and record payments and monitor expenditure.

SPECIFIC OUTCOME 5

Read, interpret and process all documents and reports and make decisions relating to cash flow.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 10

Plan, monitor and control the financial resources for a small company or business unit

SAQA US ID	*UNIT STANDARD TITLE*
116787	Plan, monitor and control the financial resources for a small company or business unit

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Review previous budget and current business plan and develop a comprehensive annual budget.

SPECIFIC OUTCOME 2

Monitor prices of materials, review pricing and prepare project costing.

SPECIFIC OUTCOME 3

Monitor income, cash flow and expenditure, and respond to problem areas.

SPECIFIC OUTCOME 4

Review financial performance, identify problem areas and implement corrective measures.

SPECIFIC OUTCOME 5

Consult relevant financial experts, clarify issues and implement changes.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 11

Design, prototype, test and refine products or services

SAQA US ID	*UNIT STANDARD TITLE*
116784	Design, prototype, test and refine products or services

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 6	20

Specific Outcomes:

SPECIFIC OUTCOME 1

Identify and understand customer needs.

SPECIFIC OUTCOME 2

Interpret customer specifications and determine or develop design.

SPECIFIC OUTCOME 3

Plan and do risk assessment of design.

SPECIFIC OUTCOME 4

Plan the production of a prototype.

SPECIFIC OUTCOME 5

Make and test a prototype.

SPECIFIC OUTCOME 6

Gather all test data, and identify and implement refinements to the design.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 12

Develop and implement a manufacturing, installation or service plan

SAQA US ID	*UNIT STANDARD TITLE*
116788	Develop and implement a manufacturing, installation or service plan

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 6	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Define and describe the product or service specifications.

SPECIFIC OUTCOME 2

Procure, prepare and install resources.

SPECIFIC OUTCOME 3

Commission equipment, trial or pilot the processes or services and measure the results.

SPECIFIC OUTCOME 4

Analyse results, and identify and implement improvements and corrective actions.

Established in terms of Act 58 of 1995

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 13

Ensure compliance with legal provisions, regulations and standards

SAQA US ID	*UNIT STANDARD TITLE*
116780	Ensure compliance with legal provisions, regulations and standards

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 6	12

Specific Outcomes:

SPECIFIC OUTCOME 1

Explain and discuss the impact and implications of relevant legislation, and identify areas required

SPECIFIC OUTCOME 2

Identify and select consultancy services to assist the business.

SPECIFIC OUTCOME 3

Brief consultant, agree terms and appoint.

SPECIFIC OUTCOME 4

Discuss consultant's findings and recommendations, select options and implement solution.

SPECIFIC OUTCOME 5

Information in terms of issues is collected and reported to relevant body.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 14

Evaluate the financial implications of changes to sustain future growth of small or medium business or autonomous business unit

SAQA US ID	*UNIT STANDARD TITLE*
116792	Evaluate the financial implications of changes to sustain future growth of small or medium business or autonomous business unit

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 6	10

Specific Outcomes:

SPECIFIC OUTCOME 1

Analyse market trends and determine their financial implications for current services or products.

SPECIFIC OUTCOME 2

Analyse market changes, identify opportunities and develop ideas for new products and or services.

SPECIFIC OUTCOME 3

Determine financial implications of changed products and or services.

SPECIFIC OUTCOME 4

Identify funding options, investigate funding models and choose appropriate options.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD: 15

Identify a gap in the market and propose solutions

SAQA US ID	*UNIT STANDARD TITLE*
116789	Identify a gap in the market and propose solutions

SGB NAME	*NSB ACRONYM*	*PROVIDER NAME*
SGB Manufacturing and Assembly Processes	NSB 06	

FIELD	*SUBFIELD*
Manufacturing, Engineering and Technology	Engineering and Related Design

ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 6	15

Specific Outcomes:

SPECIFIC OUTCOME 1

Review current products, services or technology applied, and identify possible changing needs or pot

SPECIFIC OUTCOME 2

Develop a conceptual solution, select and brief a marketing practitioner and commission a market sur

SPECIFIC OUTCOME 3

Review and discuss survey results with marketing practitioner.

SPECIFIC OUTCOME 4

Refine solution, test with the target market and determine preliminary viability.

SPECIFIC OUTCOME 5

Develop marketing strategy.