



Government Gazette Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID-AFRIKA

Vol. 442

Pretoria, 19 April 2002

No. 23329



AIDS HELPLINE: 0800-0123-22 Prevention is the cure



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GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 447

19 April 2002

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Established in terms of Act 58 of 1995

April 2002

The South African Qualifications Authority in terms of the National Standards Bodies Regulations (Government Gazette No. 18787) published on 28 March 1998, hereby give notice of additional names of the following Standards Generating Bodies:

NSB 03 : BUSINESS, COMMERCE AND MANAGEMENT STUDIES**Additional members for the SGB for HET Accountancy and Financial Management**

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Nadia Rhodes (Ms)	Technikon Witwatersrand	Technikon Witwatersrand	Holds a Diploma from the Institute of Chartered Secretaries and Administrators and an ICMA. Is a lecturer at the Technikon Witwatersrand (since 1993).
Maria Gertruida Vercueil (Ms)	Sappi Ltd	Association for the Education and Training of Accountants	Is a CA(SA). Holds the following qualifications: <ul style="list-style-type: none"> • Hons BCompt • H Dip Tax • H Ed Diploma. Taught at various schools for 10 years. Worked for various auditing firms for 11 years and is presently the Manager: Financial Training at Sappi.
Hermanus de Jager (Prof)	University of Pretoria	The Southern African Institute of Government Auditors	Holds the following qualifications: <ul style="list-style-type: none"> • BCom (Acc) • M Com (Acc) • CTA • BEd • MEd • DCom (Acc). Was an audit manager for one year. Lectured at Pretoria University for 10 years and was Professor of Auditing for 4 years. Has been Head of the School of Accountancy at Pretoria University from 1987 to date.

NSB 04 : COMMUNICATION STUDIES AND LANGUAGE**Additional names for the SGB for Government Communications and Information Systems**

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Madia, M.S (Ms)	Technikon North West	College of Technikon Principles	Holds an Honours degree in Public Administration. Is Head of the Public Management and Administration Department.
Raga, K (Mr)	Pretoria Technikon	College of Technikon Principles	Acting Head of the Department of Public Management. Holds a Masters degree in Public Management.
Ramogale, M.M (Dr)	University of Venda	University of Venda	Is Head of the English Department and holds a PhD in English Studies.

Additional names for the SGB for Translation, Language Editing and Interpreting

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Daki, Y (Ms)	National Language Project (NLP)	National Language Project (NLP)	Has a formal Teachers Diploma and is Health Programme Coordinator and Interpreter.
Rakgalakane, J (Mr)	Commission for Conciliation, Mediation and Arbitration (CCMA)	Commission for Conciliation, Mediation and Arbitration (CCMA)	Has 23 years experience in Interpreting.

Additional names for SGB for SA Sign Language and SA Sign Language Interpreting

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Maclons, K (Ms)	Sign Language Education and Development	Sign Language Education and Development	Is lecturer in Sign Language Interpreting.
Tsunke, E (Mr)	Association for Persons with Disabilities – Free State (APD)	Association for Persons with Disabilities – Free State (APD)	Is Sign Language Coordinator for the Free State Province.

NSB 09 : HEALTH SCIENCES AND SOCIAL SERVICES**Additional names for SGB for Nursing**

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Dioke, M C	South African Nursing Council	South African Nursing Council	BA Nursing; 26 year's clinical experience

**JOE SAMUELS****DIRECTOR : STANDARDS SETTING AND DEVELOPMENT**

No. 448

19 April 2002

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

Lumber Milling

Registered by NSB 01, Agriculture and Nature Conservation, publishes the following qualifications and unit standard for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification and unit standard upon which qualifications are based. The full qualification and unit standards can be accessed via the SAQA web-site at www.saga.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, 659 Pienaar street, Brooklyn, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 14 May 2002***. All correspondence should be marked **Standards Setting – SGB for Lumber Milling** and addressed to

The Director: Standards Setting and Development
SAQA

Attention: Mr. D Mphuthing

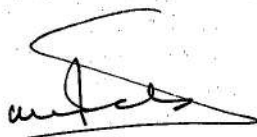
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PT **SAMUEL B.A. ISAACS**
EXECUTIVE OFFICER

NATIONAL CERTIFICATE IN GREEN TIMBER PROCESSING NQF LEVEL 1

Field: Agriculture and Nature Conservation.

Sub-field: Forestry and Wood Technology.

Level: 1

Credits: 146

RATIONALE FOR THE QUALIFICATION

"Green timber Processing" is the collective name for the process carried out in the wet mill area and starts at the log unloading deck and includes the log sorting deck/facility, log debarking facility, the log storage deck, the log haul, the wet mill and the green chain and ends before plank sorting.

- The typical range of learners is the currently employed, unemployed and other persons, who want to enter a learning programme to obtain a National Certificate in Wood Technology: Lumber Milling (Green Timber Processing) at NQF Level 1, to start building a career path in this industry.
- These learners, once qualified, will be able to effectively and efficiently work as general workers/mill hands, individually or in teams, on tasks they are responsible for at this level in the **green timber** processing area.
- South African lumber millers are facing an increasing demand for better quality products at more competitive prices. This is leading to an increased demand for more knowledgeable and better skilled personnel to produce such products. Historically this industry experienced various forms of protection. Lumber mill personnel at the lower levels were only exposed to unplanned, periodic, ad-hoc learning programmes, which did not establish an appropriately trained workforce. All protection has now been removed. This industry is now part of the global market, and it must be competitive in price and quality to survive. It can only achieve this through improved knowledge and skills levels. The new education and training dispensation can deliver this. Therefore a demand, which will increase in the future.
- This qualification equips learners with identified competencies in knowledge and skills at NQF Level 1 and it provides a basis for further learning at NQF Level 2. The exit level outcomes, which embody these competencies in knowledge and skills are listed in paragraph 8 below. The fundamental outcomes as well as the non-industry specific core of the unit standards required at this level, also provide the learner with building blocks for a learning pathway outside this industry. The choice of electives allows the learner the option of continuing his/her learning in any of four other areas in the lumber milling field.
- The learning programme, which leads to this qualification, produces a person who is knowledgeable about and appropriately skilled in performing the relevant tasks in the green timber processing area. Persons without any training or with another type of training, or persons who had undergone the ad-hoc type of training which was prevalent under the previous dispensation, will not be of the same quality for this work than a learner with this qualification.

- Improved levels of knowledge and skills lead to greater ability to produce at more competitive costs and better quality, increased sales, greater profits, more personal income, which will impact favourably both on the society and the economy of the country.

PURPOSE OF THE QUALIFICATION

A learner acquiring this qualification will be able to operate as a knowledgeable and appropriately skilled mill hand (general worker), in an effective and efficient manner, either as a member of a working team or an individual when required, performing the tasks prescribed for this level in the unit standards for processing tree stems into sawn lumber i.e. green timber processes.

The learner will know and understand the general basics of lumber milling and the relevant details of green timber processing. He/she will be able to perform the relevant tasks in this workplace to the prescribed standards, while correctly following the prescribed work procedures, and the health and safety and environmental protection measures applicable to the green timber processing area. The learner will be able to interpret and comply with the prescribed aspects of certain legislation impacting on his/her work situation. The learner will be able to communicate effectively, orally or in writing, with co-workers and responsible persons in this workplace.

This qualification provides the qualifying learner with legal proof of having achieved prescribed levels of knowledge and practical competence, where up till the present time, this only existed for tertiary educated persons.

The learning programme that leads to this qualification improves the operating abilities and therefore the earning ability of the qualifier, which must contribute to the social and economic development of the country.

This qualification qualifies a person who has successfully demonstrated his/her knowledge levels and competence in the skills prescribed for Wood Technology: Lumber Milling (Green Timber Processing) for NQF Level 1, to enroll for an NQF Level 2 Learnership and Qualification in this domain. It ensures a foundation for a structured career path for the learner.

This Qualification forms part of the Learnership in Wood Technology: Lumber Milling (Green Timber Processing) (NQF Level 1), which, together with 3 other qualifications at this level, constitute the basis of the NQF for Wood Technology. It facilitates access to and mobility within learning pathway in Lumber Milling and other Wood Technology learning pathways.

This qualification supports the objectives of the National Qualification Framework regarding access, mobility and progression, quality of learning, redress of unfair discrimination and contribution to personal development and social and economic development of the nation.

ACCESS TO QUALIFICATION

There is open access to this qualification. This Qualification is achievable by any person who can demonstrate the knowledge and skills levels, required by the fundamental, core and elective unit standards on which this qualification is based. Prospective learners do however have to note that certain tasks will be physically demanding.

LEARNING ASSUMED TO BE IN PLACE

A learner registering for a Learnership to achieve this qualification, must have literacy, communication and mathematical skills equivalent to Grade 8 schooling or ABET Level 3

EXIT-LEVEL OUTCOMES

The qualifying learner can:

Outcome 1

- Demonstrate the required level of knowledge and understanding of the general basics of lumber milling and the relevant details of **green timber processing**, by describing these verbally or in writing, in a clear and understandable manner, using the correct wood technological terminology

Associated assessment criteria

- The description proves that the learner possesses the required level of knowledge and understanding of the subject field
- The description gives the correct details of the relevant aspects of lumber milling and **green timber processing**
- The description is given in a clear and understandable manner
- The correct wood technological terminology is used

Outcome 2

- Perform the prescribed tasks of a mill hand (general worker), as a working team member or as an individual, in **green timber processing**, showing the ability to co-operate, and understand and execute instructions.

Associated assessment criteria

- The procedures prescribed for the relevant tasks are applied correctly
- The outcomes of the performance of the relevant tasks comply with the prescribed targets
- The learner co-operates successfully as a working team member
- Instructions are executed as prescribed

Outcome 3

- Demonstrate the level of knowledge and understanding required at NQF level 1, of the prescribed work procedures, the safety and health and environmental protection measures in **green timber processing**, by describing and performing these correctly

Associated assessment criteria

- The description proves that the learner has achieved the level of knowledge and understanding prescribed for NQF Level 1 in **green timber processing**
- The details given in the description are correct
- The description, verbally or written, is given in a clear and structured manner
- The correct technological terminology is used
- The relevant procedures and measures are performed as prescribed

Outcome 4

- Interpret, explain verbally or in writing, and comply with the prescribed aspects of legislation that impacts on his/her work situation, relating to the Occupational Health and Safety Act, the Labour Relations Act and the Skills Development Act

Associated assessment criteria

- The explanation proves that the learner has the level of knowledge and understanding of the subject matter which ensures correct interpretation and compliance
- The details of the prescribed aspects of the relevant legislation are interpreted and explained correctly
- The explanation of the interpretation is given in a clear and understandable manner
- The correct legal terminology is used in the explanation
- The learner in his/her work situation correctly complies with the prescribed aspects of the relevant legislation

Every one of these exit level outcomes will be developed further in the learning programme for Lumber Milling: **Green Timber Processing**, NQF Level 2 in order to comply with the knowledge and skills levels required at that level.

The successful achievement of all of the above exit level outcomes, is therefore a requirement for those learners who wish to continue their learning in this field at NQF Level 2.

Any learner who does not want to complete this qualification, can exit the learning programme after achieving outcomes 1 and 2, in order to accumulate credits for example for further learning in related learning pathways in lumber milling, or for other fields related to Wood Technology.

INTERNATIONAL COMPARABILITY

Information gained from visits to and from

- The British Columbia Institute for Technology, Vancouver Canada
- The community college at Ashville in North Caroline, U.S.A
- The Forestry Training Centre at Rotorua, New Zealand
- The Technical and Further Education (TAFE) training institute in Mt Gambier Australia influenced the thinking on this and other Wood Technology qualifications.

Qualifications from those institutions and these are not exactly the same but learning programmes and hours of learning are comparable. The inclusion of labour legislation and other non-industry specific subjects make it even more uniquely South African.

The institutions listed above are all internationally recognized as centres of excellence in training and education in the Forestry/Wood Technology field.

INTEGRATED ASSESSMENT

The unit standards on which this qualification is based, describe the competent performance in Green Timber Processing, and lay down the criteria by which competence should be judged, as well as the range of circumstances in which competence should be demonstrated. For each unit standard there are corresponding performance assessment criteria, which describe the evidence an assessor should use to determine a learner's competence.

Integrated assessment methods and tools for this qualification must allow the learner to demonstrate that he/she has acquired the knowledge of and can safely and efficiently apply the required competence in the relevant aspects of activities of Green Timber Processing, as described in paragraph 6 (purpose of this qualification) and paragraph 8 (exit level outcomes). These tools are written or oral test to determine level of knowledge and on-the-job observation to determine applied competence, as summative assessment, for all the exit level outcomes at the completion of the learning programme. The tools that can be used for formative assessment during and at the completion of the learning programme for each of the exit level outcomes, are oral testing, on-the-job observation and role-play situations. The assessor/s can decide which method will be the most appropriate in the particular situation where the assessment is taking place.

A portfolio of evidence of the outcomes of all these assessments for each learner must be built up for record purposes.

This portfolio may also include, inter alia:

- Written statements from e.g. current or previous employer, colleagues, peers, managers, i.e. persons who can supply relevant references.
- Relevant awards or certificates.
- Previous assessment records.
- Journals/logbook, records of work performance.

The currently unemployed who followed a learning programme to achieve this qualification, as well as persons seeking recognition of prior learning, can be assessed in the same way.

RECOGNITION OF PRIOR LEARNING

This qualification may be achieved in part or in whole by recognition of prior learning. The candidate in this case must be evaluated/assessed in the same manner as described in paragraph 10 above.

ARTICULATION POSSIBILITIES

The choice of elective learning components allows the learner to change to another pathway in lumber milling at the same level, or at the next higher level.

The fundamental and non-industry specific core learning components will equip the learner with credits which will be useful in other fields of learning that the learner might wish to change to at any future stage.

MODERATION OPTIONS

All providers offering the learning to achieve this qualification, must be registered with the ETQA division of FIETA.

All assessor/s must be registered with the ETQA division of FIETA, and must comply with the requirement for assessors as prescribed by this SETA. In addition, the assessor/s must at least have knowledge and skills levels in this field equivalent to those required by the NQF at level 4, plus two years of practice in this field as a worker or expert consultant or provider. All moderators moderating the assessment of learners for this qualification, must be registered with the ETQA Division of FIETA.

NOTES

The Unit Standards for the "Fundamental" and those marked with asterisks in the "Core" component of learning in the qualification matrix will have to be drawn from other organising fields, or will have to be developed.

QUALIFICATION MATRIX FOR: National Certificate In Green Timber Processing NQF Level 1

LEVEL 1	FUNDAMENTAL	CREDIT	CORE	CREDIT	ELECTIVES	CREDIT
	Literacy and Communication Skills	20	* Demonstrate understanding of the relevant aspects of the Occupational health and Safety Act	3	Demonstrate understanding of specifics of saw doctor shop	15
	Mathematical Literacy	16	* Demonstrate understanding of the relevant aspects of the Labour relations Act	3	Demonstrate understanding of specifics of lumber drying area	15
			* Demonstrate understanding of the relevant aspects of the Skills Development Act	3	Demonstrate understanding of specifics of lumber grading	15
			* Demonstrate understanding of the relevant aspects of Environmental management	3	Demonstrate understanding of specifics of dry milling	15
			* Demonstrate understanding of the relevant aspects of Quality Assurance	3		
			Demonstrate understanding of the general basics of lumber milling operation	10		
			Demonstrate understanding of relevant details of green timber processing area	15		
			Ensure cleanliness in the green timber processing area in the lumber mill	10		
			Perform manual handling in the green timber processing area in the lumber mill	10		
TOTAL		56		60	at least	30
TOTAL	LEVEL 1	146				

GREEN TIMBER PROCESSING NQF LEVEL 1**UNIT STANDARDS TITLES AT NQF LEVEL 1**

Industry specific and unit standards available:-

- Title 1. Demonstrate understanding of the general basics of lumber milling operation.
- Title 2. Demonstrate understanding of details of equipment, processes and procedures in the green timber processing area.
- Title 3. Ensure cleanliness in the green timber processing area in the lumber mill.
- Title 4. Perform manual handling in the green timber processing area in the lumber mill.
And one or more of the following:-
- Title 5. Demonstrate understanding of all equipment in saw shop and keep these facilities clean.
- Title 6. Demonstrate understanding of details of equipment, processes and procedures in lumber drying area.
- Title 7. Demonstrate understanding of details of equipment, processes and procedures in lumber grading area.
- Title 8. Demonstrate understanding of details of equipment, processes and procedures in dry milling area.

Unit standards for the following non industry specific learning components were not available at the time of the development of this qualification and will have to be sourced from the relevant organizing fields/NSB's.

- Title 9. Demonstrate understanding of the general obligations of employers, general duties of employees at work (Occupational Health and Safety Act).
- Title 10. Demonstrate understanding of the general principles, freedom of association, freedom from victimisation, employer and employee organisations (Labour Relations Act).
- Title 11. Demonstrate understanding of the general principles and requirements of learnerships and qualifications (Skills Development Act).
- Title 12. Have an awareness of pollution factors in workplace.
- Title 13. Demonstrate understanding of the basics of quality requirements in processes and products.

UNIT STANDARDS TITLES AND SPECIFIC OUTCOMES AT NQF LEVEL 1**1. Title: Demonstrate understanding of the general basics of lumber milling operation**

Specific Outcome 1.1: Explain correctly the main purpose of the enterprise's lumber milling operation.

Specific Outcome 1.2: Explain the general layout of the lumber mill.

Specific Outcome 1.3: Explain correctly the sequence of the production phases in the lumber milling process.

Specific Outcome 1.4: Explain correctly the general functions of the major production equipment and stages in the lumber milling operation.

2. Title: Demonstrate understanding of details of equipment, processes and procedures in the green timber processing area.

Specific Outcome 2.1: Explain correctly the specifics of the purpose and lay out of the relevant workplace.

Specific Outcome 2.2: Explain correctly the general functions of the major production equipment and stages in this workplace.

Specific Outcome 2.3: Explain correctly the sequence of the production phases in this workplace.

Specific Outcome 2.4: Explain correctly the work procedures, safety and health measures and environmental requirements pertaining to NQF Level 1 requirements for this workplace.

3. Title: Ensure cleanliness in the green timber processing area in the lumber mill.

Specific Outcome 3.1: Remove waste from all surfaces in the relevant workplace, including from all equipment, tools and the instruments used there.

Specific Outcome 3.2: Remove all waste generated in A above, in the prescribed manner to the designated collection points, at the scheduled times.

Specific Outcome 3.3: Collect and clean all tools and instruments not being used at any one time, as prescribed, and store in the designated storage facility.

Specific Outcome 3.4: Report any obvious malfunction of tools, instruments and equipment detected during the cleaning process, to the relevant person/s for correction.

4. Title: Perform manual handling in the green timber processing area in the lumber mill

Specific Outcome 4.1: Locate, identify and assemble items to be manually handled.

Specific Outcome 4.2: Pick up (lift) these items for movement to the designated point of delivery.

Specific Outcome 4.3: Move/carry these items to the designated point of delivery.

Specific Outcome 4.4: Deposit (put down) these items at the designated point of delivery.

5. Title: Demonstrate understanding of all equipment in the saw shop and keep equipment clean.

Specific Outcome 5.1: Explain correctly the terminology used in the Saw Doctor Shop of the Lumber Mill.

Specific Outcome 5.2: Explain correctly the saw doctoring terminology used in the Lumber Mill.

Specific Outcome 5.3: Explain the purpose of all facilities used for saw and cutter maintenance in the Lumber Mill.

Specific Outcome 5.4: Explain the correct procedures to use to keep the Saw Doctor Shop clean and tidy.

Specific Outcome 5.5: Perform the cleaning process in the Saw Doctor Shop.

6. Title: Demonstrate understanding of details of equipment, processes and procedures in lumber drying area.

Specific Outcome 6.1: Explain correctly the main purpose of the enterprise's lumber milling operation.

Specific Outcome 6.2: Explain the general layout of the lumber mill.

Specific Outcome 6.3: Explain correctly the sequence of the production phases in the lumber milling process.

Specific Outcome 6.4: Explain correctly the general functions of the major production equipment and stages in the lumber milling operation.

7. Title: Demonstrate understanding of details of equipment, processes and procedures in the lumber grading area

Specific Outcome 7.1: Explain correctly the main purpose of the enterprise's lumber milling operation.

Specific Outcome 7.2: Explain the general layout of the lumber mill.

Specific Outcome 7.3: Explain correctly the sequence of the production phases in the lumber milling process.

Specific Outcome 7.4: Explain correctly the general functions of the major production equipment and stages in the lumber milling operation.

8. Title: Demonstrate understanding of details of equipment, processes and procedures in the dry milling area.

Specific Outcome 8.1: Explain correctly the main purpose of the enterprise's lumber milling operation.

Specific Outcome 8.2: Explain the general layout of the lumber mill.

Specific Outcome 8.3: Explain correctly the sequence of the production phases in the lumber milling process.

Specific Outcome 8.4: Explain correctly the general functions of the major production equipment and stages in the lumber milling operation.

No. 449

19 April 2002

NATIONAL CERTIFICATE IN GREEN TIMBER PROCESSING NQF LEVEL 2**Field:** Agriculture and Nature Conservation.**Sub-field:** Forestry and Wood Technology.**Level:** 2**Credits:** 120**RATIONALE FOR THE QUALIFICATION**

"Green timber Processing" is the collective name for the process carried out in the wet mill area and starts at the log unloading deck and includes the log sorting deck/facility, log debarking facility, the log storage deck, the log haul, the wet mill and the green chain and ends before plank sorting.

- The typical range of learners is the currently employed, unemployed and other persons, who want to enter a learning programme to obtain a National Certificate in Wood Technology: Lumber Milling (Green Timber Processing) at NQF Level 2, to continue building a career path in this industry.
- These learners, once qualified, will be able to effectively and efficiently work as assistant operators and team leaders, on tasks they are responsible for at this level in the relevant workplace, in the green timber processing area.
- South African lumber millers are facing an increasing demand for better quality products at more competitive prices. This is leading to an increased demand for more knowledgeable and better skilled personnel to produce such products. Historically this industry experienced various forms of protection. Lumber mill personnel at the lower levels were only exposed to unplanned, periodic, ad-hoc learning programmes, which did not establish an appropriately trained workforce. All protection has now been removed. This industry is now part of the global market, and it must be competitive in price and quality to survive. It can only achieve this through improved knowledge and skills levels. The new education and training dispensation can deliver this. Therefore a demand, which will increase in the future.
- This qualification equips learners with identified competencies in knowledge and skills at NQF Level 2 and it provides a basis for further learning at NQF Level 3. The exit level outcomes, which embody these competencies in knowledge and skills are listed in paragraph 8 below. The fundamental outcomes as well as the non-industry specific core outcomes required at this level, also provide the learner with building blocks for a learning pathway outside this industry. The choice of electives allows the learner the option of continuing his/her learning in any of four other areas in the lumber milling field.
- The learning programme, which leads to this qualification, produces a person who is knowledgeable about and appropriately skilled in performing the relevant tasks in the green timber processing area. Persons without any training or with another type of training, or persons who had undergone the ad-hoc type of training which was prevalent under the previous dispensation, will not be of the same quality for this work than a learner with this qualification

- Improved levels of knowledge and skills lead to greater ability to produce at more competitive costs and better quality, increased sales, greater profits, more personal income, which will impact favourably both on the society and the economy of the country.

PURPOSE OF QUALIFICATION

A learner acquiring this qualification will be able to operate as a knowledgeable and appropriately skilled person

in leading a working team in performing the tasks in **green timber processing** prescribed in the relevant unit standards for NQF Level 2, and

in performing the activity of assistance to the responsible person in **green timber processing**, as prescribed in the unit standards for this level, in setting up or preparing production equipment, and using or operating such equipment as stand-by for the responsible person.

He/she will be able to perform the relevant tasks in this workplace to the prescribed standards, while correctly following the prescribed work procedures, and the health and safety and environmental protection measures applicable to the **green timber processing** area.

The learner will be able to interpret and comply with the prescribed aspects of the relevant legislation impacting on his/her work situation.

He/she will be able to explain the aspects of Business Principles, Computer Literacy and Quality Assurance that are prescribed for this level in **green timber processing**, and use the skills these offer him/her where relevant.

The learner will be able to describe the different parts of a tree and its stem on a cross-section, which will be proof that he/she knows and understands the material that is being processed. The learner will be able to evaluate status of reported problems, report effectively to responsible persons, exhibit leadership in leading a work team in the workplace, assist in carrying out the production programme, collate and analyse data, oversee care of and storage of instruments, tools and equipment and communicate effectively with all persons in the **green timber processing** area.

This qualification provides the learner with legal proof of having achieved prescribed levels of knowledge and skills competence, where up till the institution of the current dispensation, this only existed for tertiary educated people.

The learning programme that leads to this qualification improves the operating ability and therefore the earning ability of the qualifier, which must contribute to the social and economic development of the country.

This qualification qualifies a person who has successfully demonstrated his/her knowledge levels and competence in the skills prescribed for Wood Technology: Lumber Milling (Green Timber Processing) for NQF Level 2, to enroll for an NQF Level 3 Learnership and Qualification in this domain. It ensures a second step on a structured career path for the learner.

This Qualification forms part of the Learnership in Wood Technology: Lumber Milling (Green Timber Processing) (NQF Level 2), which, together with three other qualifications at this level, constitute the second tier or level of the NQF framework for the Lumber Milling Industry.

It facilitates access to and mobility within learning pathways in Lumber Milling and other Wood Technology learning pathways.

This qualification supports the National Qualifications Framework regarding access, mobility and progression, quality of learning, redress of unfair discrimination and contribution to personal development and social and economic development of the nation.

ACCESS TO QUALIFICATION

There is open access to this qualification. This Qualification is achievable by any person who can demonstrate the knowledge and skills levels, required by the fundamental, core and elective unit standards on which this qualifications is based. Prospective learners do however have to note that certain tasks will be physically demanding.

LEARNING ASSUMED TO BE IN PLACE

It will be assumed that a learner who registers for a learnership to achieve this qualification, will have successfully mastered the following outcomes:

(Fundamental learning)

Unit standards not available at this time

- Literacy and communication skills equivalent to ABET Level 4 or Grade 9.
- Mathematical skills equivalent to ABET Level 4 or Grade 9.

(Core learning)

Industry specific and Unit standards available:

- Demonstrate understanding of the general basics of the lumber milling operation
- Demonstrate understanding details of equipment, processes and procedures in the relevant workplace in the green timber processing area.
- Ensure cleanliness in the relevant workplace in this area.
- Perform manual handling in the relevant workplace in this area.

Not industry specific and unit standards not available at this time:

- Demonstrate understanding of the general obligations of employers, general duties of employees at work (the Occupational Health and Safety Act).
- Demonstrate understanding of the general principles, freedom of association, freedom from victimisation, employer and employee organisations (Labour relations Act).
- Demonstrate understanding of the general principles and requirements of learnerships and qualifications (Skills Development Act).
- Have an awareness of pollution factors in workplace.
- Demonstrate understanding of the basics of quality requirements in processes and products.

(Elective Learning)

Industry specific and Unit standards available

Any two of the following:

- Demonstrate understanding of the specifics of the saw doctor shop.
- Demonstrate understanding of the specifics of the lumber drying area.
- Demonstrate understanding of the specifics of the lumber grading area.
- Demonstrate understanding of the specifics of the dry milling area.

EXIT LEVEL OUTCOMES

The qualifying learner can:

Outcome 1

- Describe correctly and carry out the tasks prescribed in the unit standards for NQF Level 2 in **green timber processing**, of leading a work team and lending assistance in setting up or preparing production equipment, and operating such as a stand-by for the responsible person, demonstrating the leadership qualities and communication abilities required by his/her work situation.

Associated assessment criteria

- The learner's description of the procedures involved in his/her prescribed tasks proves that he/she has the level of knowledge and understanding of these as required at NQF Level 2
- The relevant tasks are performed as prescribed
- The learner communicates effectively with the responsible person/s and other workers in his/her work situation and understands and executes instructions regarding the relevant activities correctly
- The learner gives the prescribed quality of leadership to the work team he/she must lead when required
- The learner's contribution to the relevant production activity assures that the required delivery/production rate is maintained
- Reported problems in the relevant production activities or workplace are evaluated correctly and the outcomes reported as prescribed to the responsible person.

Outcome 2

- Demonstrate the level of knowledge and understanding required at NQF level 2, of the prescribed work procedures, the safety and health and environmental protection measures in **green timber processing**, by describing and performing these correctly

Associated assessment criteria

- The learner's description of the procedures involved in carrying out the activities in the workplace and applying the health and safety and environmental protection measures, proves that he/she has achieved the knowledge and understanding of these as required at NQF Level 2 for **green timber processing**
- The procedures prescribed for the relevant tasks regarding the work activity, safety and health and environmental protection measures, are applied correctly
- The learner's contribution in the performance of these activities ensures the successful execution of the relevant tasks
- The learner co-operates successfully as a working team leader
- Instructions are executed as prescribed

Outcome 3

- Interpret, explain verbally or in writing, and comply with the prescribed aspects of legislation for NQF Level 2, that impacts on his/her work situation, relating to the Occupational Health and Safety Act, the Labour Relations Act, the Skills Development Act, the Employment Equity Act, and the Basic Conditions of Employment Act

Associated assessment criteria

- The learner's explanation of the prescribed aspects of the relevant legislation proves that he/she has the required level of knowledge and understanding of these aspects
- The prescribed aspects of the relevant legislation are interpreted and explained correctly
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct legal terminology is used in the explanation
- The learner in his/her work situation correctly complies where relevant, with the prescribed aspects of the relevant legislation

Outcome 4

- Demonstrate the level of knowledge and understanding required at NQF level 2, by explaining correctly and clearly the relevant aspects of running a business (Business Principles)

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation

Outcome 5

- Demonstrate the level of knowledge and understanding required at this level, of what a computer is, and how to perform basic word processing, by explaining correctly the technology involved and correctly operating a basic word processing programme.

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation
- The basic word processing programme is operated with the prescribed level of skill

Outcome 6

- Demonstrate the level of knowledge and understanding required at this level of quality control and assurance in the **green timber processing** area, by correctly explaining the procedures and applying these with the prescribed level of skill.

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation
- The procedures for quality control and assurance in **green timber processing** are performed in a manner, which ensures the achievement of the prescribed outcomes.

Outcome 7

- Demonstrate the level of knowledge and understanding required at this level, of the relevant details of the material being processed, by correctly describing the parts of a tree and its stem on a cross-section.

Associated assessment criteria

- The required level of knowledge and understanding of wood as a raw material, is proven by the correct verbal or written explanation
- The correct details regarding the parts of a tree and its stem on a cross-section are described
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct wood technological terminology is used in the explanation

Every one of these exit level outcomes will be developed further in the learning programme for NQF Level 3 Lumber Milling: **Green Timber Processing**, in order to comply with the knowledge and skills levels required at that level.

The successful achievement of all of the above exit level outcomes, is therefore a requirement for those learners who wish to continue their learning in this field at NQF Level 3.

Any learner who does not want to complete this qualification, can exit the learning programme after achieving outcomes 1 and 2, in order to accumulate credits for example for further learning in related learning pathways in lumber milling, or for other fields related to Wood Technology.

INTERNATIONAL COMPARABILITY

Information gained from visits to and from

- The British Columbia Institute for Technology, Vancouver Canada
 - The community college at Ashville in North Carolina, U.S.A
 - The Forestry Training Centre at Rotorua, New Zealand
 - The Technical and Further Education (TAFE) training institute in Mt Gambier Australia
- influenced the thinking on this and other Wood Technology qualifications.

Qualifications from those institutions and these are not exactly the same but learning programmes and hours of learning are comparable. The inclusion of labour legislation and other non-industry specific subjects make it even more uniquely South African.

The institutions listed above are all internationally recognized as centres of excellence in training and education in the Forestry/Wood Technology field.

INTEGRATED ASSESSMENT

The unit standards on which this qualification is based, describe the competent performance in **Green Timber Processing**, and lay down the criteria by which competence should be judged, as well as the range of circumstances in which competence should be demonstrated

For each unit standard there are corresponding performance assessment criteria, which describe the evidence an assessor should use to determine a learner's competence.

Integrated assessment methods and tools for this qualification must allow the learner to demonstrate that he/she has acquired the prescribed knowledge of and can safely and efficiently apply the required competence in the relevant aspects of **Green Timber Processing**, as described in paragraph 6 Purpose of this qualification, and paragraph 8, Exit-level outcomes

These tools are written or oral tests to determine level of knowledge and on-the-job observation to determine applied competence, as summative assessment, for all the exit level outcomes at the completion of the learning programme.

The tools that can be used for formative assessment during and at the completion of the learning programme for each of the exit level outcomes, are oral testing, on-the-job-observation, role-play situations and structured classroom discussions. The assessor/s can decide which method will be the most appropriate in the particular situation where the assessment is taking place

A portfolio of evidence of the outcomes of all these assessments for each learner must be built up for record purposes.

This portfolio may also include, inter alia

- Written statements from e.g. current or previous employer, colleagues, peers, managers, i.e. persons who can supply relevant references
- Relevant awards or certificates
- Previous assessment records
- Journals/logbook, records of work performance

The currently unemployed who followed a learning programme to achieve this qualification, as well as persons seeking recognition of prior learning, can be assessed in the same way

RECOGNITION OF PRIOR LEARNING

This qualification may be achieved in part or in whole by recognition of prior learning. The candidate in this case must be evaluated/assessed in the same manner as described in paragraph 10 above

ARTICULATION POSSIBILITIES

The choice of elective learning components allows the learner to change to another pathway in lumber milling at the same level, or at the next higher level.

The fundamental and non-industry specific core learning components will equip the learner with credits which will be useful in other fields of learning that the learner might wish to change to at any future stage.

MODERATION

All providers offering the learning to achieve this qualification, must be registered with the ETQA division of FIETA.

All assessor/s must be registered with the ETQA division of FIETA, and must comply with the requirement for assessors as prescribed by this SETA. In addition, the assessor/s must at least have knowledge and skills levels in this field equivalent to those required by the NQF at Level 4, plus two years of practice in this field as a worker or expert consultant or provider. All moderators moderating the assessment of learners for this qualification, must be registered with the ETQA Division of FIETA.

NOTES

The Unit Standards for the "Fundamental" and those marked with asterisks in the "Core" component of learning in the qualification matrix will have to be drawn from other organising fields, or will have to be developed.

QUALIFICATION MATRIX FOR: National Certificate In Green Timber Processing NQF Level 2

LEVEL 2	FUNDAMENTAL	CREDIT	CORE	CREDIT	ELECTIVES	CREDIT
	Literacy and Communication Skills	20	Follow procedures to assist with setting up and operate log-yard	10	Demonstrate understanding of relevant aspects of Lumber Milling maths	16
	Mathematical Literacy	16	Follow procedures to assist to set up and operate green timber processing facilities	15	Demonstrate understanding of details of lumber grading	20
			Perform basic maintenance & lubrication	10	Demonstrate understanding of details of dry lumber conversion	20
			Demonstrate understanding of different parts of tree	5	Demonstrate understanding of details of finger jointing and laminating	20
			* Demonstrate understanding of relevant aspects of Labour Relations Act	1		
			* Demonstrate understanding of relevant aspects of Employment Equity Act	1		
			* Demonstrate understanding of relevant aspects of Skills Development Act	1		
			* Demonstrate understanding of relevant aspects of Basic Conditions of Employment Act	1		
			* Demonstrate understanding of relevant aspects of computer literacy	1		
			* Demonstrate understanding of relevant aspects of business principles	1		
			* Demonstrate understanding of relevant principles of environmental management	1		
			* Demonstrate understanding of relevant aspects of quality management	1		
TOTAL		36		48	at least	36
TOTAL	LEVEL 2	120				

GREEN TIMBER PROCESSING NQF LEVEL 2

UNIT STANDARDS TITLES AT NQF LEVEL 2

Industry specific and unit standards available:-

- Title 1. Demonstrate understanding of the different parts of a tree and its stem on cross-section.
 - Title 2. Follow procedures to assist to set up and operate facilities in the log-yard.
 - Title 3. Follow procedures to assist to set up and operate green timber processing facilities in the relevant workplace in the wet mill.
 - Title 4. Perform basic maintenance and lubrication in this workplace.
- And one or more of the following:**
- Title 5. Demonstrate understanding of basic principles of lumber kiln drying schedule
 - Title 6. Demonstrate understanding of the specific details of lumber grading
 - Title 7. Demonstrate understanding of the specific details of dry mill conversion
 - Title 8. Follow procedures to assist to set up and operate finger jointing and laminating equipment.

Unit standards for the following non industry specific learning components were not available at the time of the development of this qualification and will have to be sourced from the relevant organizing fields/NSB's.

- Title 9. Demonstrate understanding of the aspects of the Occupational Health and Safety Act regarding listed work, health and safety reps and committees.
- Title 10. Demonstrate understanding of the aspects of the Labour Relations Act regarding general protection and organisational rights, bargaining institutions, resolving disputes, disciplinary and grievance procedures, right to strike and right to lock out.
- Title 11. Demonstrate understanding of the relevant aspects of the Employment Equity Act regarding its interpretation and application and prohibition of unfair discrimination.
- Title 12. Demonstrate understanding of the relevant aspects of the Skills Development Act regarding workplace skills plan, its purpose, compilation and execution.
- Title 13. Demonstrate understanding of the relevant aspects of the Basic Conditions of Employment Act regarding principles of the Act, working time, leave and remuneration.
- Title 14. Demonstrate understanding of the relevant aspects of Business Principles regarding shareholding, profits and losses.
- Title 15. Demonstrate understanding of the relevant aspects of Computer Literacy regarding what is a computer and basic word processing.
- Title 16. Demonstrate understanding of the relevant aspects of Environmental Management regarding operational principles and employees' responsibilities.
- Title 17. Demonstrate understanding of the relevant aspects of Quality Assurance regarding principles of quality sampling procedures and basic principles of material and product specifications.
- Title 18. Demonstrate understanding of relevant aspects of Special Mathematics for lumber milling (NSB Regs 9. (1) (c) regarding concept of volume and area measurement, use of measuring tools and instruments, methods of measuring (mensuration), and concept of shapes.

UNIT STANDARDS TITLES AND SPECIFIC OUTCOMES AT NQF LEVEL 2

1. Title: Demonstrate understanding of the different parts of a tree and its stem on cross-section.

Specific Outcome 1.1: Identify the main parts of a tree.

Specific Outcome 1.2: Identify those main features of wood visible to the naked eye on the cross section of a tree stem.

Specific Outcome 1.3: Identify the special growth features of wood that usually affect dried quality of wood.

Specific Outcome 1.4: Explain the basic differences between hardwoods and softwoods.

2. Title: Follow procedures to assist to set up and operate facilities in the log-yard.

Specific Outcome 2.1: Follow procedures to assist with offloading logs using the correct techniques onto the log receiving deck/offloading deck.

Specific Outcome 2.2: Follow procedures to assist with sorting logs and storing using the correct tools, equipment and equipment into the correct log classes.

Specific Outcome 2.3: Follow procedures to assist with setting up and operating the debarking facility.

Specific Outcome 2.4: Follow procedures to assist with feeding sorted debarked logs into the Wet Mill in accordance with planned Wet Mill material requirements.

Specific Outcome 2.5: Follow procedures to assist in keeping records of logs received at and processed in the logyard (log tallying).

3. Title: Follow procedures to assist to set up and operate green timber processing facilities in the relevant workplace in the wet mill.

Specific Outcome 3.1: Follow procedures to assist in maintaining a regular / constant flow of materials through all the processing phases in the Wet Mill.

Specific Outcome 3.2: Follow procedures to assist in setting up green timber processing equipment for production runs in the Wet Mill.

Specific Outcome 3.3: Follow procedures to assist in operating green timber processing machines/equipment and materials handling equipment in the Wet Mill.

Specific Outcome 3.4: Follow procedures to assist in the removal and disposal of wood waste in the prescribed manner, place and time in the Wet Mill.

4. Title: Perform basic maintenance and lubrication in this workplace.

Specific Outcome 4.1: Explain the procedures for the basic maintenance and lubrication programme for the facilities in the relevant workplace in the lumber mill.

Specific Outcome 4.2: Describe the cleaning equipment, materials and other aids to be used in the process.

Specific Outcome 4.3: Describe the storage location and inventory proceedings for the maintenance and lubrication materials and tools.

Specific Outcome 4.4: Perform the basic maintenance and lubrication programme as prescribed.

5. Title: Demonstrate understanding of the basic principles of a kiln drying schedule.

Specific Outcome 5.1: Explain the basic factors that must be taken into consideration in a kiln drying schedule.

Specific Outcome 5.2: Explain types of kiln drying schedules.

Specific Outcome 5.3: Describe the stages of a kiln drying schedule.

Specific Outcome 5.4: Explain the process of determining drying rate and end point of drying cycle.

6. Title: Demonstrate understanding of the specific details of lumber grading.

Specific Outcome 6.1: Explain correctly the relevant visual grading rules and specifications for the appearance grade products that the relevant enterprise produces.

Specific Outcome 6.2: Explain correctly the relevant visual grading rules, and specifications for stress (strength) graded product that this enterprise produces.

Specific Outcome 6.3: Explain correctly the relevant mechanical grading rules and specifications for the various stress (strength) grade products that this enterprise produces.

Specific Outcome 6.4: Explain correctly the relevant grading marks for the various grades of products that are produced, and their respective placements on these products.

7. Title: Demonstrate understanding of the specific details of dry mill conversion.

Specific Outcome 7.1: Explain correctly the purpose and process of rip-sawing to recover narrower and/or thinner products from dried lumber.

Specific Outcome 7.2: Explain correctly the purpose and process of cross-cutting to recover shorter products from dried lumber.

Specific Outcome 7.3: Explain correctly the purpose and process of planning lumber.

Specific Outcome 7.4: Explain correctly the purpose and process of moulding lumber.

Specific Outcome 7.5: Explain correctly the work procedures, safety and health measures and environmental requirements pertaining to the dry milling area.

8. Title: Follow procedures to assist to set up and operate finger-jointing and laminating area in the lumber mill.

Specific Outcome 8.1: Explain correctly the purpose and process of feeding finger-joint cutter machine.

Specific Outcome 8.2: Explain correctly the purpose and process of applying glue to finger profiles for necessary coverage to the whole of each intermeshing surface of each finger manually and / or mechanically, and what is meant by correct axail alignment.

Specific Outcome 8.3: Explain correctly the purpose and process of feeding out jointed pieces correctly supported from the press at the correct time and correctly crosscut.

Specific Outcome 8.4: Explain correctly the purpose and process of stacking finger-jointed material for curing.

Specific Outcome 8.5: Explain correctly the purpose and process of feeding laminates through glue applicator equipment.

Specific Outcome 8.6: Explain correctly the purpose and process laying up glued laminates in relevant jig for pressing.

Specific Outcome 8.7: Explain correctly the work procedures, safety and health measures and environmental requirements pertaining to the Finger Jointing and Laminating area.

No. 450

19 April 2002

NATIONAL CERTIFICATE IN GREEN TIMBER PROCESSING NQF LEVEL 3**Field:** Agriculture and Nature Conservation.**Sub-field:** Forestry and Wood Technology.**Level:** 3**Credits:** 135**RATIONALE FOR THE QUALIFICATION**

"Green Timber Processing" is the collective name for the process carried out in the wet mill area, and starts at the log unloading deck and includes the log sorting deck/facility, log debarking facility, the log storage deck, the log haul, the wet mill and the green chain and ends before plank sorting.

- The typical range of learners is the currently employed, unemployed and other persons, who want to enter a learning programme to obtain a National Certificate in Wood Technology: Lumber Milling (Green Timber Processing) at NQF Level 3, to continue building a career path in this industry.
- These learners, once qualified, will be able to effectively and efficiently work as operators and leaders of work teams, on tasks they are responsible for at this level in the relevant workplace in the green timber processing area.
- South African lumber millers are facing an increasing demand for better quality products at more competitive prices. This is leading to an increased demand for more knowledgeable and better skilled personnel to produce such products. Historically this industry experienced various forms of protection. Lumber mill personnel at the lower levels were only exposed to unplanned, periodic, ad-hoc learning programmes, which did not establish an appropriately trained workforce. All protection has now been removed. This industry is now part of the global market, and it must be competitive in price and quality to survive. It can only achieve this through improved knowledge and skills levels. The new education and training dispensation can deliver this. Therefore a demand, which will increase in the future.
- This qualification equips learners with identified competencies in knowledge and skills at NQF Level 3 and it provides a basis for further learning at NQF level 4. The exit level outcomes, which embody these competencies in knowledge and skills are listed in paragraph 8 below. The fundamental outcomes as well as the non-industry specific core outcomes required at this level, also provide the learner with building blocks for a learning pathway outside this industry. The choice of electives allows the learner the option of continuing his/her learning in any of four other areas in the lumber milling field.
- The learning programme, which leads to this qualification, produces a person who is knowledgeable about and appropriately skilled in performing the relevant tasks in the green timber processing area. Persons without any training or with another type of training, or persons who had undergone the ad-hoc type of training which was prevalent under the previous dispensation, will not be of the same quality for this work than a learner with this qualification.
- Improved levels of knowledge and skills lead to greater ability to produce at more competitive costs and better quality, increased sales, greater profits, more personal income, which will impact favourably both on the society and the economy of the country.

PURPOSE OF QUALIFICATION

A learner acquiring this qualification will be able to perform the functions/duties/responsibilities of the person responsible for the production tasks in green timber processing, demonstrating the knowledge and skills competencies levels prescribed in the unit standards for NQF Level 3 in this field.

He/she will be able to perform the relevant tasks in this workplace to the prescribed standards, while correctly following the prescribed work procedures, and the health and safety and environmental protection measures applicable to the **green timber processing** area.

The learner will be able to interpret and comply with the prescribed aspects of the relevant legislation impacting on his/her work situation.

He/she will be able to explain the aspects of Business Principles, Computer Literacy and Quality Assurance that are prescribed for this level in **green timber processing**, and use the skills these offer him/her where relevant.

This learner will be able to describe the structure of wood and how this relates to its appearance, strength and water holding properties.

This qualification provides the qualifying learner with legal proof of having achieved the prescribed levels of knowledge and practical competence, where up till the present time, this only existed for tertiary educated persons.

The learning programme that leads to this qualification improves the operating ability and therefore the earning ability of the qualifier, which must contribute to the social and economic development of the country.

This qualification qualifies a person who has successfully demonstrated his/her knowledge levels and competence in the skills prescribed for Wood Technology: Lumber Milling (**Green Timber Processing**) for NQF Level 3, to enroll for an NQF Level 4 Learnership and Qualification in this domain. It ensures another step on a structured career path for the learner. This Qualification forms part of the Learnership in Wood Technology: Lumber Milling (**Green Timber Processing**) (NQF Level 3), which, together with three other qualifications at this level, constitute the third tier or level of the NQF framework for the Lumber Milling Industry.

It facilitates access to and mobility within learning pathways in Lumber Milling and other Wood Technology learning pathways. This qualification supports the National Qualifications Framework regarding access, mobility and progression, quality of learning, redress of unfair discrimination and contribution to personal development and social and economic development of the nation

ACCESS TO QUALIFICATION

There is open access to this qualification. This Qualification is achievable by any person who can demonstrate the knowledge and skills levels, required by the fundamental, core and elective unit standards on which this qualifications is based. Prospective learners do however have to note that certain tasks will be physically demanding.

LEARNING ASSUMED TO BE IN PLACE

It will be assumed that a learner who registers for a learnership to achieve this qualification, will have successfully mastered the following outcomes:

(Fundamental learning)

- Communicate orally and in writing to standards equivalent to NQF Level 2 requirements.
- Exhibit mathematical skills equivalent to NQF Level 2 requirements.

(Core learning)

- Demonstrate understanding of the different parts of a tree and its stem on cross-section.
- Follow procedures to assist to set up and operate facilities in the log-yard.
- Follow procedures to assist to set up and operate green timber processing facilities in the relevant workplace in the wet mill.
- Perform basic maintenance and lubrication in this workplace.
- Perform these tasks according to the work procedures of the enterprise, and subject to the relevant safety and health prescriptions and the applicable environmental management principles.
- Demonstrate understanding of the aspects of the Occupational Health and Safety Act regarding listed work, health and safety reps and committees.
- Demonstrate understanding of the aspects of the Labour Relations Act regarding general protection and organisational rights, bargaining institutions, resolving disputes, disciplinary and grievance procedures, right to strike and right to lock out.
- Demonstrate understanding of the relevant aspects of the Employment Equity Act regarding its interpretation and application and prohibition of unfair discrimination.
- Demonstrate understanding of the relevant aspects of the Skills Development Act regarding workplace skills plan, its purpose, compilation and execution.
- Demonstrate understanding of the relevant aspects of the Basic Conditions of Employment Act regarding principles of the Act, working time, leave and remuneration.
- Demonstrate understanding of the relevant aspects of Business Principles regarding shareholding, profits and losses.
- Demonstrate understanding of the relevant aspects of Computer Literacy regarding what is a computer and basic word processing.
- Demonstrate understanding of the relevant aspects of Environmental Management regarding operational principles and employees' responsibilities
- Demonstrate understanding of the relevant aspects of Quality Assurance regarding principles of quality sampling procedures and basic principles of material and principles of quality sampling procedures and basic principles of material and product specifications

(Elective Learning)

- Demonstrate understanding of the relevant details of lumber drying, or lumber grading, or dry mill conversion, or finger jointing and laminating.
- Demonstrate understanding of relevant aspects of Special Mathematics for lumber milling (NSB Regs 9. (1) (c) regarding concept of volume and area measurement, use of measuring tools and instruments, methods of measuring (mensuration), and concept of shapes.

(Cross-field Outcomes)

- Evaluate status of reported problems, report orally or in writing to relevant person/s, lead work team in workplace, assist to carry out production programme, collating and analysing data, communicate effectively with all relevant persons and oversee the care and storage of tools and instruments used in the workplace.

EXIT LEVEL OUTCOMES

The qualifying learner can:

Outcome 1

- Describe and perform the functions/duties/responsibilities required of the person responsible for the production tasks in **green timber processing**, demonstrating the knowledge and skills competencies levels prescribed in the unit standards for NQF Level 3 in this field.

Associated assessment criteria

- The learner's description demonstrates a knowledge and understanding of the functions/duties/responsibilities required of the person responsible for the production tasks in **green timber processing**, which complies with the requirements prescribed for NQF Level 3
- The relevant tasks are performed as prescribed
- The learner communicates effectively with the responsible person/s and other workers in his/her work situation and gives the necessary guidance required of his position in the prescribed manner
- The learner gives the prescribed quality of leadership to the work team he/she must lead in his/her work situation
- This learner's contribution to the relevant production activity assures that the required delivery/production rate is maintained
- Reported problems in the relevant production activities or workplace are solved and the necessary decisions made in the prescribed manner
- Workers in the learner's area of authority in the **green timber processing area** are motivated, guided and trained in the relevant production activities in the prescribed manner

Outcome 2

- Demonstrate the level of knowledge and understanding required at NQF level 3, of the prescribed work procedures, the safety and health and environmental protection measures in **green timber processing**, by describing and performing these correctly

Associated assessment criteria

- The learner's description demonstrates a knowledge and understanding of the work procedures, safety and health, and environmental protection measures, which complies with the prescriptions for the NQF Level 3 in **green timber processing**
- The procedures prescribed for the relevant tasks regarding the work activity, safety and health and environmental protection measures, are applied correctly
- The learner's correct guidance and motivation of the workers in the performance of these activities ensures the execution of the relevant tasks as prescribed
- The learner achieves the required co-operation successfully as a leader in his/her area of authority in the **green timber processing area**
- His/her instructions are understood and executed as prescribed

Outcome 3

- Interpret, explain verbally or in writing, and comply with the prescribed aspects of legislation for NQF Level 3, that impacts on his/her work situation; relating to the OSH Act, the Labour Relations Act, the Skills Development Act, the Employment Equity Act, and the Basic Conditions of Employment Act

Associated assessment criteria

- The learner's explanation of the prescribed aspects of the relevant legislation proves that he/she has the level of knowledge and understanding of these aspects as required at NQF Level 3 for **green timber processing**
- The prescribed aspects of the relevant legislation are interpreted and explained correctly
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct legal terminology is used in the explanation
- The learner in his/her work situation correctly complies where relevant, with the prescribed aspects of the relevant legislation

Outcome 4

- Demonstrate the level of knowledge and understanding required at NQF level 3, by explaining correctly and clearly the relevant aspects of running a business (Business Principles)

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation

Outcome 5

- Demonstrate the level of knowledge and understanding required at this level, regarding computer software packages relevant to lumber milling and their use, by explaining correctly the technology involved and correctly applying these programmes

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation
- The relevant software programmes are operated with the prescribed level of skill

Outcome 6

- Demonstrate the level of knowledge and understanding required at NQF level 3, of quality control and assurance in the **green timber processing** area, by correctly explaining the procedures and applying these with the prescribed level of skill.

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation
- The procedures for quality control and assurance in **green timber processing** are performed in a manner which ensures the achievement of the prescribed outcomes

Outcome 7

- Demonstrate the knowledge and understanding required at NQF level 3, of the relevant details of the material being processed, by correctly describing the structure of wood and how this relates to its appearance, strength and water holding properties.

Associated assessment criteria

- The required level of knowledge and understanding of wood as a raw material, is proven by the correct verbal or written explanation of its structure and how this relates to its appearance, strength and water holding properties
- The details regarding the structure of wood and how this relates to the relevant properties, are described correctly
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct wood technological terminology is used in the explanation

Every one of these exit level outcomes, except outcome 4 which relates to Business Principles, will be developed further in the learning programme for NQF Level 4 Lumber Milling: **Green Timber Processing**, in order to comply with the knowledge and skills levels required at that level.

The successful achievement of all of the above exit level outcomes, is therefore a requirement for those learners who wish to continue their learning in this field at NQF Level 4.

Any learner who does not want to complete this qualification, can exit the learning programme after achieving outcomes 1 and 2, in order to accumulate credits for example for further learning in related learning pathways in lumber milling, or for other fields related to Wood Technology.

INTERNATIONAL COMPARABILITY

Information gained from visits to and from

- The British Columbia Institute for Technology, Vancouver Canada
- The community college at Ashville in North Caroline, U.S.A
- The Forestry Training Centre at Rotorua, New Zealand
- The Technical and Further Education (TAFE) training institute in Mt Gambier Australia influenced the thinking on this and other Wood Technology qualifications.

Qualifications from those institutions and these are not exactly the same but learning programmes and hours of learning are comparable. The inclusion of labor legislation and other non-industry specific subjects make it even more uniquely South African.

The institutions listed above are all internationally recognized as centres of excellence in training and education in the Forestry/Wood Technology field.

INTEGRATED ASSESSMENT

The unit standards on which this qualification is based, describe the competent performance in **Green Timber Processing**, and lay down the criteria by which competence should be judged, as well as the range of circumstances in which competence should be demonstrated.

For each unit standard there are corresponding performance assessment criteria, which describe the evidence an assessor should use to determine a learner's competence.

Integrated assessment methods and tools for this qualification must allow the learner to demonstrate that he/she has acquired the prescribed knowledge of and can safely and efficiently apply the required competence in the relevant aspects of **Green Timber Processing**, as described in paragraph 6 (Purpose of this qualification) and paragraph 8 (Exit-level outcomes).

These tools are written or oral tests to determine level of knowledge and on-the-job observation, to determine applied competence, as summative assessment, for all the exit level outcomes at the completion of the learning programme.

The tools that can be used for formative assessment during and at the completion of the learning programme for each of the exit level outcomes, are oral testing, on the-job-observation, role-play situations and structured classroom discussions. The assessor/s can decide which method will be the most appropriate in the particular situation where the assessment is taking place.

A portfolio of evidence of the outcomes of all these assessments for each learner must be built up for record purposes.

This portfolio may also include, inter alia

- Written statements from e.g. current or previous employer, colleagues, peers, managers, i.e. persons who can supply relevant references
- Relevant awards or certificates
- Previous assessment records
- Journals/logbook, records of work performance

The currently unemployed who followed a learning programme to achieve this qualification, as well as persons seeking recognition of prior learning, can be assessed in the same way

RECOGNITION OF PRIOR LEARNING

This qualification may be achieved in part or in whole by recognition of prior learning. The candidate in this case must be evaluated/assessed in the same manner as described in paragraph 10 above.

ARTICULATION POSSIBILITIES

The choice of elective learning components allows the learner to change to another pathway in lumber milling at the same level, or at the next higher level.

The fundamental and non-industry specific core learning components will equip the learner with credits which will be useful in other fields of learning that the learner might wish to change to at any future stage.

MODERATION OPTIONS

All providers offering the learning to achieve this qualification, must be registered with the ETQA division of FIETA.

All assessor/s must be registered with the ETQA division of FIETA, and must comply with the requirement for assessors as prescribed by this SETA. In addition the assessor/s must at least have the knowledge and skills levels in this field equivalent to those required by the NQF at Level 4, plus two years of practice in this field as a worker or expert consultant or provider. All moderators moderating the assessment of learners for this qualification, must be registered with the ETQA Division of FIETA.

NOTES

The Unit Standards for the "Fundamental" and those marked with asterisks in the "Core" component of learning in the qualification matrix will have to be drawn from other organising fields, or will have to be developed.

QUALIFICATION MATRIX FOR: National Certificate In Green Timber Processing NQF Level 3

LEVEL 3	FUNDAMENTAL	CREDIT	CORE	CREDIT	ELECTIVES	CREDIT
	Literacy and Communication Skills	20	Demonstrate understanding of structure of wood and how it relates to its strength, appearance and water holding	15	Demonstrate understanding of relevant aspects of Lumber Milling maths	16
	Mathematical Literacy	16	Set up and operate log debark facilities	5	Control lumber grading	20
			Set up and operate log sort etc facilities	5	Set up and operate dry mill conversion equipment	20
			Set up and operate primary log-breakdown facilities	10	Produce FJ & Laminated lumber	20
			Set up and operate secondary break down facilities	10		
			Set up and operate edging Facilities	5		
			Set up and operate cross-cutting facilities	5		
			Set up and control chipping facilities	5		
			Control basic maintenance and lubrication	15		
			* Demonstrate understanding of relevant aspects of Labour Relations Act	1		
			* Demonstrate understanding of relevant aspects of Employment Equity Act	1		
			* Demonstrate understanding of relevant aspects of Skills Development Act	1		
			* Demonstrate understanding of relevant aspects of Basic Conditions of Employment Act	1		
			* Demonstrate understanding of relevant aspects of computer literacy	1		
			* Demonstrate understanding of relevant aspects of business principles	1		
			* Demonstrate understanding of relevant principles of environmental management	1		
			* Demonstrate understanding of relevant aspects of quality management	1		

TOTAL		36		83	at least	16
TOTAL		135				

GREEN TIMBER PROCESSING NQF LEVEL 3

UNIT STANDARDS TITLES AT NQF LEVEL 3

Industry specific and unit standards available:-

- Title 1. Demonstrate understanding of the structure of wood and how it relates to its appearance, strength and water holding.
- Title 2. Control basic maintenance and lubrication in this workplace.
- Title 3. Set up and operate log debarking facilities in green timber processing area of lumber mill
- Title 4. Set up and operate log handling, sorting and storage facilities (log yard) in green timber processing area of lumber mill.
- Title 5. Set up and operate primary log breakdown facilities in green timber processing area of lumber mill.
- Title 6. Set up and operate secondary log breakdown facilities in green timber processing area of lumber mill.
- Title 7. Set up and operate green lumber edging facilities in green timber processing area of lumber mill.
- Title 8. Set up and operate green lumber edging/trimming facilities in green timber processing area of lumber mill.
- Title 9. Set up and control green chip production facilities in green timber processing area of lumber mill.

And one or more of the following:

- Title 10. Control lumber grading
- Title 11. Set up and operate dry mill conversion equipment.
- Title 12. Produce finger jointing lumber
- Title 13. Produce laminating lumber.

Unit standards for the following non industry specific learning components were not available at the time of the development of this qualification and will have to be sourced from the relevant organizing fields/NSB's.

- Title 14. Demonstrate understanding of the relevant aspects of the Occupational Health and Safety Act.
- Title 15. Demonstrate understanding of the relevant aspects of the Labour Relations Act regarding Commission for Conciliation, Mediation and Arbitration procedures, unfair dismissal and unfair labour practice.
- Title 16. Demonstrate understanding of the relevant aspects of the Employment Equity Act regarding affirmative action procedures, monitoring, enforcement and legal procedure.
- Title 17. Demonstrate understanding of the relevant aspects of the Skills Development Act regarding learnerships, learner rights, employer rights, provider rights, contracts.
- Title 18. Demonstrate understanding of the relevant aspects of the Basic Conditions of Employment Act regarding employment contract, employment criteria, termination of employment.
- Title 19. Demonstrate understanding of the relevant aspects of Business Principles regarding financial management basics, budgeting principles.
- Title 20. Demonstrate understanding of the relevant aspects of Computer Literacy regarding software packages and their use.
- Title 21. Demonstrate understanding of the relevant aspects of Environmental Management Principles.
- Title 22. Demonstrate understanding of the relevant aspects of Quality Assurance regarding quality systems, SABS specifications, ISO 9000 principles.
- Title 23. Demonstrate understanding of relevant aspects of Special Mathematics for lumber milling (NSB Regs 9. (1) (c) regarding calculations of speed/time, weight/density, fractions and percentages, linear graphs and moving averages.

UNIT STANDARDS TITLES AND SPECIFIC OUTCOMES AT NQF LEVEL 3

1. Title: Control basic maintenance and lubrication in this workplace.

Specific Outcome 1.1: Demonstrate an understanding of the purpose of, and how to control, the basic maintenance and lubrication programme for the relevant workplace.

GREEN TIMBER PROCESSING NQF LEVEL 3

UNIT STANDARDS TITLES AT NQF LEVEL 3

Industry specific and unit standards available:-

- Title 1. Demonstrate understanding of the structure of wood and how it relates to its appearance, strength and water holding.
- Title 2. Control basic maintenance and lubrication in this workplace.
- Title 3. Set up and operate log debarking facilities in green timber processing area of lumber mill
- Title 4. Set up and operate log handling, sorting and storage facilities (log yard) in green timber processing area of lumber mill.
- Title 5. Set up and operate primary log breakdown facilities in green timber processing area of lumber mill.
- Title 6. Set up and operate secondary log breakdown facilities in green timber processing area of lumber mill.
- Title 7. Set up and operate green lumber edging facilities in green timber processing area of lumber mill.
- Title 8. Set up and operate green lumber edging/trimming facilities in green timber processing area of lumber mill.
- Title 9. Set up and control green chip production facilities in green timber processing area of lumber mill.

And one or more of the following:

- Title 10. Control lumber grading
- Title 11. Set up and operate dry mill conversion equipment.
- Title 12. Produce finger jointing lumber
- Title 13. Produce laminating lumber.

Unit standards for the following non industry specific learning components were not available at the time of the development of this qualification and will have to be sourced from the relevant organizing fields/NSB's.

- Title 14. Demonstrate understanding of the relevant aspects of the Occupational Health and Safety Act.
- Title 15. Demonstrate understanding of the relevant aspects of the Labour Relations Act regarding Commission for Conciliation, Mediation and Arbitration procedures, unfair dismissal and unfair labour practice.
- Title 16. Demonstrate understanding of the relevant aspects of the Employment Equity Act regarding affirmative action procedures, monitoring, enforcement and legal procedure.
- Title 17. Demonstrate understanding of the relevant aspects of the Skills Development Act regarding learnerships, learner rights, employer rights, provider rights, contracts.
- Title 18. Demonstrate understanding of the relevant aspects of the Basic Conditions of Employment Act regarding employment contract, employment criteria, termination of employment.
- Title 19. Demonstrate understanding of the relevant aspects of Business Principles regarding financial management basics, budgeting principles.
- Title 20. Demonstrate understanding of the relevant aspects of Computer Literacy regarding software packages and their use.
- Title 21. Demonstrate understanding of the relevant aspects of Environmental Management Principles.
- Title 22. Demonstrate understanding of the relevant aspects of Quality Assurance regarding quality systems, SABS specifications, ISO 9000 principles.
- Title 23. Demonstrate understanding of relevant aspects of Special Mathematics for lumber milling (NSB Regs 9. (1) (c) regarding calculations of speed/time, weight/density, fractions and percentages, linear graphs and moving averages.

UNIT STANDARDS TITLES AND SPECIFIC OUTCOMES AT NQF LEVEL 3

1. Title: Control basic maintenance and lubrication in this workplace.

Specific Outcome 1.1: Demonstrate an understanding of the purpose of, and how to control, the basic maintenance and lubrication programme for the relevant workplace.

- Specific Outcome 1.2: Demonstrate an understanding of the functions, the purpose and the methods of application of the basic maintenance and lubrication equipment and materials.
- Specific Outcome 1.3: Control the storage facilities and keeping inventory of the basic maintenance and lubrication equipment and materials.
- Specific Outcome 1.4: Oversee the basic maintenance and lubrication of the equipment in the relevant workplace.

2. Title: Demonstrate understanding of the structure of wood and how it relates to its appearance, strength and water holding.

- Specific Outcome 2.1: Describe the fine (microscopic) structure of wood, i.e. the "units".
- Specific Outcome 2.2: Describe how this relates to the weight (density) and strength of wood.
- Specific Outcome 2.3: Explain the influence these units have on the appearance of wood.
- Specific Outcome 2.4: Explain how wood holds water.
- Specific Outcome 2.5: Explain why and how wood shrinks and swells ("moves").

3. Title: Set up and operate log debarking facilities in green timber processing area of lumber mill.

- Specific Outcome 3.1: Assemble all the tools and equipment required to set up and operate the debarking facility in the prescribed manner.
- Specific Outcome 3.2: Demonstrate the set up, alignment and testing of the debarking facility as prescribed. (Includes repairing / replacing components as prescribed as well as those found to be faulty during set up and testing).
- Specific Outcome 3.3: Operate the debarking facility in the prescribed manner to prescribed standards.
- Specific Outcome 3.4: Control the quantity and quality of debarked logs processed through the debarker(s).
- Specific Outcome 3.5: Complete routine maintenance and lubrication schedules of the debarking facility.

4. Title: Set up and operate log handling, sorting and storage facilities (log yard) in green timber processing area of lumber mill.

- Specific Outcome 4.1: Collect all prescribed tools required for log handling and sorting in the log yard. (handling = movement, sorting, storage, measuring, recording, reporting)
- Specific Outcome 4.3: Set up the log handling, sorting and storage facilities system to ensure prescribed standards. (facilities = people, tools and equipment).
- Specific Outcome 4.4: Control the log yard operations in the prescribed manner to the prescribed standards.
- Specific Outcome 4.5: Control log yard throughput and quality to maintain prescribed product standards.

Specific Outcome 4.6: Carry out routine maintenance and lubrication of log yard handling and recording equipment.

5. Title: Set up and operate primary log breakdown facilities in green timber processing area of lumber mill.

Specific Outcome 5.1: Collect all the prescribed setting up tools and equipment and log cutting tools (blades, knives) for the individual primary log breakdown and ancillary materials handling equipment.

Specific Outcome 5.2: Set up the primary log breakdown facilities equipment and install the required cutting tools, to prescribed standards, in the prescribed manner.

Specific Outcome 5.3: Operate primary log breakdown equipment in the prescribed manner to convert round logs into wet sawn lumber of prescribed dimensions and standards.

Specific Outcome 5.4: Control the throughput and quality to maintain prescribed standards.

Specific Outcome 5.5: Carry out prescribed routine maintenance and lubrication of log breakdown and ancillary handling equipment.

6. Title: Set up and operate secondary log breakdown facilities in green timber processing area of lumber mill.

Specific Outcome 6.1: Collect all the prescribed setting up tools and equipment and green lumber cutting tools (blades, knives) for the individual secondary log breakdown and ancillary materials handling equipment.

Specific Outcome 6.2: Set up the secondary log breakdown facilities equipment and install the required cutting tools, to prescribed standards, in the prescribed manner.

Specific Outcome 6.3: Operate secondary log breakdown equipment in the prescribed manner to convert cants etc. into green lumber of prescribed thickness.

Specific Outcome 6.4: Control the throughput and quality to maintain prescribed standards.

Specific Outcome 6.5: Carry out prescribed routine maintenance and lubrication of secondary log breakdown and ancillary handling equipment.

7. Title: Set up and operate green lumber edging facilities in green timber processing area of lumber mill.

Specific Outcome 7.1: Collect all the prescribed setting up tools and equipment and cutting tools (blades, knives) for the green lumber edging.

Specific Outcome 7.2: Set up the green lumber edging equipment and install the required cutting tools, to prescribed standards, in the prescribed manner. (green lumber = board, fitch, slab).

Specific Outcome 7.3: Operate the board edging equipment in the prescribed manner to produce lumber of the prescribed width.

Specific Outcome 7.4: Control the throughput and quality to maintain prescribed standards.

Specific Outcome 7.5: Carry out prescribed routine maintenance and lubrication of board edging and ancillary handling equipment.

8. Title: Set up and operate green lumber edging/trimming facilities in green timber processing area of lumber mill.

- Specific Outcome 8.1: Collect all the prescribed setting up tools and equipment and cutting tools for the crosscutting green lumber.
- Specific Outcome 8.2: Set up the green lumber crosscutting equipment and install the required cutting tools, to prescribed standards, in the prescribed manner. (green lumber = board, flitch, slab).
- Specific Outcome 8.3: Operate the crosscutting equipment in the prescribed manner to produce lumber of the prescribed lengths.
- Specific Outcome 8.4: Control the through put and quality to maintain prescribed standards.
- Specific Outcome 8.5: Carry out prescribed routine maintenance and lubrication of board crosscutting and ancillary handling equipment.

9. Title: Set up and control green chip production facilities in green timber processing area of lumber mill.

- Specific Outcome 9.1: Collect all the prescribed setting up tools and equipment and cutting tools for the chipping green lumber.
- Specific Outcome 9.2: Set up the green lumber chipping equipment and install the required cutting tools, to prescribed standards, in the prescribed manner. (green lumber = board, flitch, slab, off cuts, trim ends, edge strips).
- Specific Outcome 9.3: Control the operation of the chipping equipment in the prescribed manner.
- Specific Outcome 9.4: Control the through put and quality to maintain prescribed standards.
- Specific Outcome 9.5: Carry out basic routine maintenance and lubrication of chip production and ancillary handling equipment.

10. Title: Control lumber grading.

- Specific Outcome10.1: Check that relevant lumber grading facility is correctly prepared.
- Specific Outcome10.2: Check that the products to be graded have been correctly identified, collected and presented at the grading facility.
- Specific Outcome10.3: Control the actual grading process.
- Specific Outcome10.4: Oversee the correct sorting and assembling into parcels of graded lumber with similar dimensions and graders' markings.
- Specific Outcome10.5: Oversee the correct stacking, stamping/marking and strapping of graded and marked products into prescribed size parcels for dispatch.

11. Title: Set up and operate dry mill conversion equipment.

- Specific Outcome11.1: Access and assemble the necessary tools, instruments, equipment and cutting tools required for setting up this conversion equipment.
- Specific Outcome11.2: Install and set up conversion tools / cutting blades / knives to produce thinner and narrower products.

Specific Outcome 11.3: Operate conversion equipment to convert dried lumber into thinner and narrower length products.

Specific Outcome 11.4: Monitor quality of product produced.

Specific Outcome 11.5: Explain correctly the work procedures, safety and health measures and environmental requirements pertaining to the dry milling area.

12. Title: Produce finger jointing lumber in the lumber mill.

Specific Outcome 12.1: Explain correctly the purpose and process of setting up Finger Joint Cutter machine.

Specific Outcome 12.2: Explain correctly purpose and process of establishing Finger Joints with the correct profile dimensions.

Specific Outcome 12.3: Explain correctly the purpose and process of sorting only approved lumber to accepted specification.

Specific Outcome 12.4: Explain correctly that the purpose and process of stacking and distributing graded FJ lumber to the correct destination.

Specific Outcome 12.5: Explain correctly the purpose and process of cross cutting, stacking and curing of Finger Jointed lumber.

Specific Outcome 12.6: Explain correctly the work procedures, safety and health measures and environmental requirements pertaining to the Finger Jointing and Laminating area.

13. Title: Produce laminating lumber in the lumber mill.

Specific Outcome 13.1: Explain correctly the purpose and process of applying glue to laminates.

Specific Outcome 13.2: Explain correctly the purpose and process of laminate assembly in the press.

Specific Outcome 13.3: Explain correctly the purpose and process of applying pressure and using a torque wrench.

Specific Outcome 13.4: Explain correctly the purpose and process of applying heat for correct curing.

Specific Outcome 13.5: Explain correctly the purpose and process of releasing pressure and removal of baulks from the press.

Specific Outcome 13.6: Explain correctly the work procedures, safety and health measures and environmental requirements pertaining to the Finger Jointing and Laminating area.

No. 451

19 April 2002

NATIONAL CERTIFICATE IN GREEN TIMBER PROCESSING NQF LEVEL 4**Field:** Agriculture and Nature Conservation.**Sub-field:** Forestry and Wood Technology.**Level:** 4**Credits:** 121**RATIONALE FOR THE QUALIFICATION**

"Green Timber Processing" is the collective name for the process carried out in the wet mill area, and starts at the log unloading deck and includes the log sorting deck/facility, log debarking facility, the log storage deck, the log haul, the wet mill and the green chain and ends before plank sorting.

- The typical range of learners is the currently employed, unemployed and other persons, who want to enter a learning programme to obtain a National Certificate in Wood Technology: Lumber Milling (Green Timber Processing) at NQF Level 4, to continue building a career path in this industry.
- These learners, once qualified, will be able to effectively and efficiently work as supervisors or foremen, on tasks they are responsible for at this level in the relevant workplace in the green timber processing area.
- South African lumber millers are facing an increasing demand for better quality products at more competitive prices. This is leading to an increased demand for more knowledgeable and better skilled personnel to produce such products. Historically this industry experienced various forms of protection. Lumber mill personnel at the lower levels were only exposed to unplanned, periodic, ad-hoc learning programmes, which did not establish an appropriately trained workforce. All protection has now been removed. This industry is now part of the global market, and it must be competitive in price and quality to survive. It can only achieve this through improved knowledge and skills levels. The new education and training dispensation can deliver this. Therefore a demand, which will increase in the future.
- This qualification equips learners with identified competencies in knowledge and skills at NQF Level 4 and it provides a basis for further learning at NQF Level 5. The exit level outcomes, which embody these competencies in knowledge and skills are listed in paragraph 8 below. The fundamental outcomes as well as the non-industry specific core outcomes required at this level, also provide the learner with building blocks for a learning pathway outside this industry. The choice of electives allows the learner the option of continuing his/her learning in any of three other areas in the lumber milling field.
- The learning programme, which leads to this qualification, produces a person who is knowledgeable about and appropriately skilled in performing the relevant tasks in the green timber processing area. Persons without any training or with another type of training, or persons who had undergone the ad-hoc type of training which was prevalent under the previous dispensation, will not be of the same quality for this work than a learner with this qualification.
- Improved levels of knowledge and skills lead to greater ability to produce at more competitive costs and better quality, increased sales, greater profits, more personal income, which will impact favourably both on the society and the economy of the country.

PURPOSE OF QUALIFICATION

A learner acquiring this qualification will be able to carry out his/her prescribed responsibilities in a knowledgeable and skillful manner as a supervisor/manager of all the activities that take place in the **green timber processing area** in a lumber mill as prescribed in the unit standards for NQF Level 4 in this field.

He/she will be able to perform the relevant tasks in this workplace to the prescribed standards, while correctly following the prescribed work procedures, and the health and safety and environmental protection measures applicable to the **green timber processing area** for NQF Level 4.

The learner will be able to interpret and comply with the prescribed aspects of the relevant legislation impacting on his/her work situation at this level.

He/she will be able to explain the aspects of Computer Literacy and Quality Assurance that are prescribed for this level in **green timber processing**, and use the skills these offer him/her correctly where relevant.

This learner will be able to describe the influence of the structure of wood, its properties and certain production factors on its final quality.

This qualification provides the qualifying learner with legal proof of having achieved the prescribed levels of knowledge and practical competence, where up till the present time, this only existed for tertiary educated persons.

The learning programme that leads to this qualification improves the operating ability and therefore the earning ability of the qualifier, which must contribute to the social and economic development of the country.

This qualification qualifies a person who has successfully demonstrated his/her knowledge levels and competence in the skills prescribed for Wood Technology: Lumber Milling (**Green Timber Processing**) for NQF Level 4, to enroll for an NQF Level 5 Learnership and Qualification in this domain. It ensures a higher step on a structured career path for the learner. This Qualification forms part of the Learnership in Wood Technology: Lumber Milling (**Green Timber Processing**) (NQF Level 4), which, together with three other qualifications at this level, constitute the fourth tier or level of the NQF framework for the Lumber Milling Industry.

It facilitates access to and mobility within learning pathways in Lumber Milling and other Wood Technology learning pathways.

This qualification supports the National Qualifications Framework regarding access, mobility and progression, quality of learning, redress of unfair discrimination and contribution to personal development and social and economic development of the nation.

ACCESS TO QUALIFICATION

There is open access to this qualification. This Qualification is achievable by any person who can demonstrate the knowledge and skills levels, required by the fundamental, core and elective unit standards on which this qualification is based. Prospective learners do however have to note that certain tasks will be physically demanding.

LEARNING ASSUMED TO BE IN PLACE

It will be assumed that a learner who registers for a learnership to achieve this qualification, will have successfully mastered the following outcomes:

(Fundamental learning)

- Communicate orally and in writing to standards equivalent to NQF Level 3 requirements.

- Exhibit mathematical skills equivalent to NQF Level 3 requirements.

(Core learning)

- Demonstrate understanding of the structure of wood and how it relates to its appearance, strength and water holding.
- Set up and operate facilities in the log-yard.
- Set up and operate all green timber processing facilities in the relevant workplace in the wet mill
- Control basic maintenance and lubrication in this workplace.
- Perform these tasks according to the work procedures of the enterprise, and subject to the relevant safety and health prescriptions and the applicable environmental management principles.
- Demonstrate understanding of the relevant aspects of the OSH Act.
- Demonstrate understanding of the relevant aspects of the LRA regarding CCMA procedures, unfair dismissal and unfair labour practice.
- Demonstrate understanding of the relevant aspects of the EEA regarding affirmative action procedures, monitoring, enforcement and legal procedure.
- Demonstrate understanding of the relevant aspects of the SDA regarding learnerships, learner rights, employer rights, provider rights, contracts.
- Demonstrate understanding of the relevant aspects of the BCEA regarding employment contract, employment criteria, termination of employment.
- Demonstrate understanding of the relevant aspects of Business Principles regarding financial management basics, budgeting principles.
- Demonstrate understanding of the relevant aspects of Computer Literacy regarding software packages and their use.
- Demonstrate understanding of the relevant aspects of Environmental Management principles.
- Demonstrate understanding of the relevant aspects of Quality Assurance regarding quality systems, SABS specifications, ISO 9000 principles.

(Elective Learning)

- Demonstrate understanding of the relevant details of lumber grading, or dry mill conversion, or finger jointing and laminating
- Demonstrate understanding of relevant aspects of Special Mathematics for lumber milling (NSB Regs 9. (1) (c) regarding calculations of speed/time, weight/density, fractions and percentages, linear graphs and moving averages.

(Crossfield Outcomes)

- Solve problems and make decisions regarding the activities in the relevant workplace; lead the other workers in this workplace; carry out the production programme; collate and analyse data and report results to relevant person/s; assist in training learners in this workplace; assume full responsibility for all equipment, tools and instruments used in this workplace.

EXIT LEVEL OUTCOMES

The qualifying learner can:

Outcome 1

- Describe and carry out his/her prescribed responsibilities in a knowledgeable and skillful manner as a manager of all the activities that take place in the **green timber processing area** in a lumber mill, as prescribed in the unit standards for NQF Level 4 in this field.

Associated assessment criteria

- The learner's description demonstrates a knowledge of the management principles applicable to his/her area of authority, which complies with the requirements prescribed for NQF Level 4
- The learner's description is given in a clear and understandable manner

- The learner performs the management of the various aspects that control the operation of the green timber processing area, in the prescribed manner
- The correct interaction of the learner with the people involved in the production activities in his/her area of authority, and his/her decision making and planning ability, ensures that the prescribed production targets of the enterprise are achieved
- The learner ensures that the workers in his/her area of authority, i.e. the **green timber processing area**, are motivated, guided and trained in the prescribed manner in the relevant production and related activities.

Outcome 2

- Demonstrate the level of knowledge and understanding required at NQF level 4, of the prescribed work procedures, the safety and health and environmental protection measures in **green timber processing**, by describing and performing these correctly

Associated assessment criteria

- The learner's description demonstrates a knowledge and understanding of the work procedures, safety and health, and environmental protection measures, which complies with the prescriptions for the NQF Level 4 in **green timber processing**
- The learner's description is given in a clear and understandable manner
- The procedures prescribed for the relevant tasks regarding the work activity, safety and health and environmental protection measures, are applied correctly
- The learner's correct guidance and motivation of the workers in the performance of these activities ensures that the relevant tasks are performed as prescribed

Outcome 3

- Interpret, explain verbally or in writing, and comply with the prescribed aspects of legislation for NQF Level 4, that impacts on his/her work situation, relating to the Labour Relations Act, the Employment Equity Act, and the Basic Conditions of Employment Act

Associated assessment criteria

- The learner's explanation of the prescribed aspects of the relevant legislation proves that he/she has the required level of knowledge and understanding of these aspects
- The prescribed aspects of the relevant legislation are interpreted and explained correctly
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct legal terminology is used in the explanation
- The learner in his/her work situation correctly complies where relevant, with the prescribed aspects of the relevant legislation

Outcome 4

- Demonstrate the level of knowledge and understanding required at this level, regarding computer software packages relevant to lumber milling and their use, by explaining correctly the technology involved and correctly applying these programmes

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation
- The relevant software programmes are operated with the prescribed level of skill

Outcome 5

- Demonstrate the level of knowledge and understanding required at NQF level 4, of quality control and assurance in the **green timber processing** area, by correctly explaining the procedures and applying these with the prescribed level of skill.

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation
- The procedures for quality control and assurance in **green timber processing** are performed in the correct manner which ensures the achievement of the prescribed outcomes

Outcome 6

- Demonstrate the level of knowledge and understanding required at NQF Level 4, of the application of the prescribed aspects of productivity enhancement in the **green timber processing** area, by correctly explaining the procedures, and applying these with the prescribed level of skill

Associated assessment criteria

- The required level of knowledge and understanding is proven by the correct verbal or written explanation
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct terminology is used in the explanation
- The procedures for productivity enhancement in **green timber processing** are performed in the correct manner which ensures the achievement of the prescribed outcomes

Outcome 7

- Demonstrate the knowledge and understanding required at NQF level 4, of the relevant details of the material being processed, by correctly describing the influence of the structure of wood, its properties and certain production factors on its quality

Associated assessment criteria

- The required level of knowledge and understanding of wood as a raw material, is proven by the correct verbal or written explanation of the influence of the structure of wood, its properties and certain production factors, on its quality
- The details regarding the influence of the structure of wood, its properties and certain production factors on its quality, are described correctly
- The explanation is given in a structured and understandable manner of a standard required at this level
- The correct wood technological terminology is used in the explanation

Every one of these exit level outcomes will be developed further in the learning programme for NQF Level 5 Lumber Milling: **Green Timber Processing**, in order to comply with the knowledge and skills levels required at that level.

The successful achievement of all of the above exit level outcomes, is therefor a requirement for those learners who wish to continue their learning in this field at NQF Level 5.

Any learner who does not want to complete this qualification, can exit the learning programme after achieving outcomes 1 and 2, in order to accumulate credits for example for further learning in related learning pathways in lumber milling, or for other fields related to Wood Technology.

INTERNATIONAL COMPARABILITY

Information gained from visits to and from

- The British Columbia Institute for Technology, Vancouver Canada
- The community college at Ashville in North Caroline, U.S.A

- The Forestry Training Centre at Rotorua, New Zealand
 - The Technical and Further Education (TAFE) training institute in Mt Gambier Australia
- influenced the thinking on this and other Wood Technology qualifications.

Qualifications from those institutions and these are not exactly the same but learning programmes and hours of learning are comparable. The inclusion of labor legislation and other non-industry specific subjects make it even more uniquely South African.

The institutions listed above are all internationally recognized as centres of excellence in training and education in the Forestry/Wood Technology field.

INTEGRATED ASSESSMENT

The unit standards on which this qualification is based, describe the competent performance in **Green Timber Processing**, and lay down the criteria by which competence should be judged, as well as the range of circumstances in which competence should be demonstrated.

For each unit standard there are corresponding performance assessment criteria, which describe the evidence an assessor should use to determine a learner's competence.

Integrated assessment methods and tools for this qualification must allow the learner to demonstrate that he/she has acquired the prescribed knowledge of and can safely and efficiently apply the required competence in the relevant aspects of **Green Timber Processing**, as described in paragraph 6 (Purpose of this qualification), and paragraph 8 (Exit-level outcomes)

These tools are written or oral tests to determine level of knowledge and on-the-job observation, to determine applied competence, as summative assessment, for all the exit level outcomes at the completion of the learning programme.

The tools that can be used for formative assessment during and at the completion of the learning programme for each of the exit level outcomes, are oral testing, on-the-job-observation, role-play situations and structured classroom discussions.

The assessor/s can decide which method will be the most appropriate in the particular situation where the assessment is taking place.

A portfolio of evidence of the outcomes of all these assessments for each learner must be built up for record purposes.

This portfolio may also include, inter alia

- Written statements from e.g. current or previous employer, colleagues, peers, managers, i.e. persons who can supply relevant references
- Relevant awards or certificates
- Previous assessment records
- Journals/logbook, records of work performance

The currently unemployed who followed a learning programme to achieve this qualification, as well as persons seeking recognition of prior learning, can be assessed in the same way

RECOGNITION OF PRIOR LEARNING

This qualification may be achieved in part or in whole by recognition of prior learning. The candidate in this case must be evaluated/assessed in the same manner as described in paragraph 10 above.

ARTICULATION POSSIBILITIES

The choice of elective learning components allows the learner to change to another pathway in lumber milling at the same level, or at the next higher level.

The fundamental and non-industry specific core learning components will equip the learner with credits which will be useful in other fields of learning that the learner might wish to change to at any future stage.

MODERATION OPTIONS

All providers offering the learning to achieve this qualification, must be registered with the ETQA division of FIETA.

All assessor/s must be registered with the ETQA division of FIETA, and must comply with the requirement for assessors as prescribed by this SETA. In addition the assessor/s must at least have the knowledge and skills levels in this field equivalent to those required by the NQF at Level 4, plus two years of practice in this field as a worker or expert consultant or provider. All moderators moderating the assessment of learners for this qualification, must be registered with the ETQA Division of FIETA.

NOTES

The Unit Standards for the "Fundamental" and those marked with asterisks in the "Core" component of learning in the qualification matrix will have to be drawn from other organising fields, or will have to be developed.

QUALIFICATION MATRIX FOR: National Certificate In Green Timber Processing NQF Level 4

LEVEL 4	FUNDAMENTAL	CREDIT	CORE	CREDIT	ELECTIVES	CREDIT
	Literacy and Communication Skills	20	Demonstrate understanding of influence of wood structures, properties and production factors on its quality	15	Demonstrate understanding of relevant aspects of Lumber Milling maths	16
	Mathematics	16	Manage production in relevant workplace	15	Manage production in lumber grading	15
			Manage workforce in this workplace	15	Manage production in dry mill	15
			Manage safety and health in this workplace	15	Manage production in FJ & Laminating	15
			* Demonstrate understanding of relevant aspects of Labour Relations Act	1	Demonstrate understanding of principles and application of productivity measures	20
			* Demonstrate understanding of relevant aspects of Employment Equity Act	1		
			* Demonstrate understanding of relevant aspects of Basic Conditions of Employment Act	1		
			Demonstrate understanding of relevant aspects of Environmental management	1		
			Demonstrate understanding of relevant aspects of Quality Assurance	1		
TOTAL		36		65	at least	20
TOTAL		121				

GREEN TIMBER PROCESSING NQF LEVEL 4**UNIT STANDARDS TITLES AT NQF LEVEL 4**

Industry specific and unit standards available:-

- Title 1. Manage production in green timber processing area in lumber mill.
- Title 2. Manage workforce in green timber processing area in lumber mill.
- Title 3. Manage safety, health and environmental protection in green timber processing area in lumber mill.
- Title 4. Demonstrate understanding of influence of wood structures, properties and certain production factors on wood quality.

And one or more of the following:

- Title 5. Manage production in lumber grading
- Title 6. Manage production in dry mill conversion
- Title 7. Manage production in finger jointing and laminating

Unit standards for the following non industry specific learning components were not available at the time of the development of this qualification and will have to be sourced from the relevant organizing fields/NSB's.

- Title 8. Perform these tasks according to the work procedures of the enterprise, and subject to the relevant safety and health prescriptions and the applicable environmental management principles.
- Title 9. Demonstrate understanding of the relevant aspects of the Labour Relations Act regarding negotiations and the South African labour market.
- Title 10. Demonstrate understanding of the relevant aspects of the Employment Equity Act regarding its general provisions.
- Title 11. Demonstrate understanding of the relevant aspects of the Basic Conditions of Employment Act regarding variations in basic conditions.
- Title 12. Demonstrate understanding of the relevant aspects of Computer Literacy regarding networking and systems.
- Title 13. Demonstrate understanding of the relevant aspects of Environmental Management regarding ISO 14 000 and other systems.
- Title 14. Demonstrate understanding of the relevant aspects of Quality Assurance regarding quality audits.
- Title 15. Demonstrate understanding of the principles and application of productivity measures.

UNIT STANDARDS TITLES AND SPECIFIC OUTCOMES AT NQF LEVEL 4**1. Title: Manage production in green timber processing area in lumber mill.**

Specific Outcome 1.1: Plan and initiate production runs in the relevant workplace.

Specific Outcome 1.2: Record the progress of these production runs and quality of output.

Specific Outcome 1.3: Analyse the data on progress and quality of output achieved as compared to the schedule provided by management.

Specific Outcome 1.4: Adapt procedures if necessary, to achieve original output targets.

Specific Outcome 1.5: Analyse data on completed production runs to provide information for future improvements.

2. Title: Manage workforce in green timber processing area in lumber mill.

Specific Outcome 2.1: Lead, communicate with and motivate the personnel employed in the relevant workplace in the lumber mill.

Specific Outcome 2.2: Manage the education and training of personnel.

Specific Outcome 2.3: Apply the relevant disciplinary and grievance procedures.

Specific Outcome 2.4: Keep employment records of personnel involved in the activities of the relevant workplace.

3. Title: Manage safety, health and environmental protection in green timber processing area in lumber mill.

Specific Outcome 3.1: Ensure that the health and safety measures and environment protection procedures prescribed for the relevant workplace are understood and adhered to.

Specific Outcome 3.2: Ensure that these measures and procedures are applied as prescribed to make the workplace safe for workers and free from health hazards, and to prevent environmental contamination.

Specific Outcome 3.3: Train all workers in this workplace in emergency drills, practical first aid application and handling environmental pollution procedures relevant to this workplace.

Specific Outcome 3.4: Ensure that first aid materials and tools and equipment for emergency contingencies, are clearly visible and easily accessible.

Specific Outcome 3.5: Ensure the accurate recording of first aid activities, emergency situations and cases of environmental pollution, indicating reasons for occurrence, remedial actions taken, and results/outcomes.

4. Title: Demonstrate understanding of influence of wood structures, properties and certain production factors on wood quality.

Specific Outcome 4.1: Explain the wood quality requirements generally specified by the main users of wood products.

Specific Outcome 4.2: Describe the effect of wood growth properties on these quality requirements.

Specific Outcome 4.3: Describe the effect of machined wood properties on these quality requirements

Specific Outcome 4.4: Describe the effect of the drying out process of wood on these quality requirements.

5. Title: Manage production in lumber grading.

Specific Outcome 5.1: Plan and initiate production runs in the relevant workplace.

Specific Outcome 5.2: Record the progress of these production runs and quality of output.

Specific Outcome 5.3: Analyse the data on progress and quality of output achieved as compared to the schedule provided by management.

Specific Outcome 5.4: Adapt procedures if necessary, to achieve original output targets.

Specific Outcome 5.5: Analyse data on completed production runs to provide information for future improvements.

6. Title: Manage production in dry mill conversion.

Specific Outcome 6.1: Plan and initiate production runs in the relevant workplace.

Specific Outcome 6.2: Record the progress of these production runs and quality of output.

Specific Outcome 6.3: Analyse the data on progress and quality of output achieved as compared to the schedule provided by management.

Specific Outcome 6.4: Adapt procedures if necessary, to achieve original output targets.

Specific Outcome 6.5: Analyse data on completed production runs to provide information for future improvements.

7. Title: Manage production finger jointing and laminating.

Specific Outcome 7.1: Plan and initiate production runs in the relevant workplace.

Specific Outcome 7.2: Record the progress of these production runs and quality of output.

Specific Outcome 7.3: Analyse the data on progress and quality of output achieved as compared to the schedule provided by management.

Specific Outcome 7.4: Adapt procedures if necessary, to achieve original output targets.

Specific Outcome 7.5: Analyse data on completed production runs to provide information for future improvements.

No. 452

19 April 2002

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

Nature Conservation

Registered by NSB 01, Agriculture and Nature Conservation, publishes the following qualifications and unit standard for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification and unit standard upon which qualifications are based. The full qualification and unit standards can be accessed via the SAQA web-site at www.saqa.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, 659 Pienaar street, Brooklyn, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 14 May 2002***. All correspondence should be marked **Standards Setting – SGB for Nature Conservation** 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 – 482 0907



pp SAMUEL B.A. ISAACS
EXECUTIVE OFFICER

General Education and Training Certificate: Conservation

Field: Agriculture and Nature Conservation

Sub-field: Nature conservation

NQF level: 1

Credits: 130

Rationale of the Qualification

The GETC level or Level 1 of the NQF is a key stage within the learning pathways of those with limited formal education. As the culmination of Adult Basic Education and Training (ABET), it represents strategic development of under-educated individuals. As the bridge between ABET and Further Education and Training (FET), it represents the laying of a solid grounding for individuals to move into and within sector or career pathways, in many cases using already existing technical or vocational skills for purposeful progression.

ABET is a continuum of learning beginning at initial literacy at ABET Level 1 and culminating at ABET Level 4, that is NQF level 1. In many respects ABET has been excluded from SETA and NQF-related developments¹, primarily due to the fact that the GETC was seen as a school-focused 'general education' certificate for both school and adult learners. Industry-based qualifications were perceived as taking NQF Level 2 as their starting point.

This perception has shifted with the realisation that sustainable skills development must be based on foundational skills and knowledge, many of which are encompassed by ABET. This applies even to some learners who already have a senior certificate, but lack aspects of foundational skills.

Qualification Purpose

A learner who has achieved this qualification will have a firm foundation of portable skills for further learning, an overview of key issues and practices in conservation, and entry skills and knowledge relating to a specific area of conservation.

Learners will have achieved a GET level both in general education areas such as literacy and numeracy, and in a range of life skills, providing them with the platform from which to proceed into the FET band. Competence in language use and computation are key to further learning. Life

¹ See King, M: ABET and the NQF: Skills Development, conference paper September 2002

skills such as study skills enable learners to engage successfully with further education and training opportunities. Other life skills give them an understanding of the contexts in which they live and work, including insight into technology, work and business environments, and issues such as health, safety and ethics within society.

Learners with this qualification will also gain an introductory knowledge of key issues, principles and practices in conservation, in relation to both nature and cultural conservation. This will enable them to understand the nature and importance of conservation, some of the technical skills relating to conservation, and the impact that conservation (or the lack thereof) can have on both our environment and on our heritage. Through the elective component of the qualification learners will also be able to select a possible pathway or sector in which they can begin to apply conservation skills and strategies in a specific context.

Access to qualification:

None.

Learning assumed to be in place

It is assumed that learners wishing to enter a programme leading to this qualification have demonstrated competence in the unit standards for ABET Level 3 Language and Communications, and ABET Level 3 Numeracy.

Exit level outcomes

On achieving this qualification the learner will be able to:

1. Use language, literacy and communication to show a critical awareness of language usage; engage with a range of values in texts; identify, access, analyse, use and present information; use appropriate communication skills, conventions and structures for specific purposes and situations; explore and use a variety of strategies to learn; engage with meaning, organisation and structure in texts.
2. Use mathematics to work with numbers, number patterns, measurements, ratio and relationships, space, shape and mapping; and to understand the role of maths in the social, cultural, political and economic worlds.
3. Use learning and research methods that will help them analyse and organise information; utilise efficient time management and study skills; and undertake effective personal planning and self-management.
4. Function within a workplace environment and understand common workplace processes.
5. Recognise the role and impact of technology in society, and recognise and access appropriate and available technology in a specific context.
6. Pursue physical and mental health, and be aware of safety and security issues.
7. Be familiar with general business principles and practices at a basic level.
8. Show an understanding of social issues in general, and identify own values, ethics and social responsibilities.
9. Recognise that conservation encompasses a broad spectrum of issues (natural, cultural and urban), and identify approaches that impact on sustainability.
10. Recognise that there are many ecosystems with unique features, and understand the interdependence within and between ecosystems and the impact of ecosystem breakdown.
11. Recognise that skills and knowledge contribute to sustainability.
12. Develop personal conservation ethics.
13. Assist in conserving vulnerable areas.
14. Use selected technical skills and apply safety principles in a conservation context.

15. Apply core skills and knowledge in conservation to a particular context (e.g. game reserves, marine reserves, cultural heritage sites, urban sites etc.), assisting in using appropriate strategies (e.g. monitoring, maintaining, managing etc).

Associated assessment criteria

In particular assessors should check for:

The learner must demonstrate an ability to consider a range of options and make decisions about:

- Using communication, computational and learning skills effectively in order to make choices about further education and training.
- Using information gathered about conservation to make appropriate decisions regarding career options.
- Using knowledge of conservation to make judgements about the impact of conservation decisions.

The learner must demonstrate an understanding of:

- The nature and functions of a broad range of generic skills as a foundation for learning.
- Good practice in conservation.
- Ethical and safety issues in conservation.
- Key features of conservation.

The learner must demonstrate the ability to:

- Apply learning skills and general knowledge in their personal, workplace and educational lives.
- Apply skills relevant to a conservation context appropriately.
- Work with others in both learning and work-oriented situations.

Integrated assessment

Integrated assessment at the level of qualification provides an opportunity for learners to show that they are able to integrate concepts, ideas and actions across unit standards to achieve competence that is grounded and coherent in relation to the purpose of the qualification.

Integrated assessment should show how already demonstrated competence in individual areas can be linked and applied for the achievement of a holistic outcome.

Integrated assessment must judge the quality of the observable performance, and also the quality of the thinking that lies behind it. Assessment tools must encourage learners to give an account of the thinking and decision-making that underpin their demonstrated performance. Some assessment practices will demand practical evidence while others may be more theoretical, depending on the type of outcomes to be assessed, and the nature and level of the qualification. The ratio between action and interpretation is not fixed, but varies according to the demands of the qualification.

While the generic component (literacy, communication and life skills) of this qualification at NQF Level 1 can be assessed through occupational contexts and activities relating to conservation, care must be taken in both the learning programme and the assessment to ensure that these foundational skills are truly portable. The primary aim of this qualification is to ensure that learners have a sound base of general education to prepare them for further learning, whatever career path they may choose. Learners must be able to transfer generic skills such as language, computation and learning skills etc across a number of different contexts, and apply them within a number of learning areas.

A broad range of task-orientated and theoretical assessment tools may be used, with the distinction between practical knowledge and disciplinary knowledge maintained so that each takes its rightful place.

Articulation possibilities

This qualification shares the same fundamental learning areas as that of the GETC in Tourism and GETC in Sport, Recreation and fitness. These qualifications are generic in the sense that they share a large portion of standards relating to knowledge and skill areas which are foundational to further learning.

Criteria for registration of assessors

For an applicant to register as an assessor, the applicant needs:

- A minimum of two years practical, relevant occupational experience.
- Declared competent in all the outcomes of the National Assessor Unit Standards as stipulated by SAQA.
- Detailed documentary proof of educational qualification, practical training undergone, and experience gained by the applicant must be provided (Portfolio of evidence).
- Meet any other stipulated requirements by the relevant ETQA.

Recognition of prior learning

This qualification may be achieved in part or as a whole through the recognition of prior learning, according to the requirements of the standards.

International comparability

The bulk of this qualification is made up of the Fundamental components, reflecting foundational learning and generic skills and knowledge. These have been derived from best practice adult education both local and international. The core and elective components have been developed taking into account South Africa's very varied natural and heritage conservation context, informed by international best practice.

Moderation

1. Anyone assessing a learner against these standards must be registered as an assessor with the relevant ETQA.
2. Any institution offering learning that will enable achievement of these unit standards or will assess these unit standards must be accredited as a provider with the relevant ETQA.
3. Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines in the relevant qualification and the agreed ETQA procedures.

Therefore anyone wishing to be assessed against this qualification may apply to be assessed by any assessment agency, assessor or provider institution which is accredited by the relevant ETQA.

A note on the compilation of standards in this qualification

In line with the SAQA principle of avoiding duplication, existing registered standards were used where possible. The issues that arose in this regard are documented in the Rationale accompanying this submission.

	Level 1	Level 2	Total
Fundamental	80	0	80
Core	15	12	27
Elective	2	21	23
Total	97	33	130

Unit standards for: General Education & Training Certificate: Conservation

Unit Standards at NQF Level 1

- * Title: Show a critical awareness of language usage (ID: COM 001).
- * Title: Engage with esthetic, affective, cultural, and social values in texts (ID: COM 002).
- * Title: Identify, access, use and present information (ID: COM 003).
- * Title: Use appropriate communication skills, conventions and structure for specific purposes and situations (ID: COM 004).
- * Title: Explore and use a variety of strategies to learn (ID: COM 005).
- * Title: Engage with meaning, organisation and structure in texts (ID: COM 006).
- * Title: Demonstrate understanding about ways of working with whole numbers (ID: Math 001).
- * Title: Demonstrate understanding about ways of working with positive rational numbers (ID: Math 002).
- * Title: Demonstrate understanding about ways of working with integers (ID: Math 003).
- * Title: Recognise and work with patterns (ID: Math 004).
- * Title: Use and express generalizations of patterns in various contexts (ID: Math 005).
- * Title: Critically analyse how maths is used in social, political and economic relations (ID: Math 006).
- * Title: Work with measurement in a variety of contexts (ID: Math 007).
- * Title: Collect, analyse, use and communicate numerical data (ID: Math 008).
- * Title: Use mathematical models to describe and represent relationships between quantities in a variety of ways (ID: Math 009).
- * Title: Use algebraic notation, conventions and terminology to solve problems (ID: Math 010).
- * Title: Analyse, interpret and give meaning to mathematical models in a variety of ways and in different contexts (ID: Math 011).
- * Title: Use maps to access and communicate information concerning routes, location and direction (ID: Math 012).
- * Title: Describe and represent objects and the environment in terms of shape, space, time and motion (ID: Math 013).
- * Title: Analyse cultural products and processes as representations of shape, space and time (ID: Math 014).
- * Title: Practice effective self-management skills (ID: LO/06).
- * Title: Demonstrate a critical understanding of the role and impact of technology in society (ID: TECH001).
- * Title: Demonstrate an understanding of basic accounting (ID: EMS 005).
- * Title: Identify, analyse and select various business opportunities (ID: SMME 002).
- * Title: Demonstrate an understanding of a general business plan and adapt it to a selected business idea (ID: SMME 003).
- * Title: Understand human physical development, health and sexuality and their consequences (ID: LO/02).
- * Title: Demonstrate skills that relate to a safe and secure environment (ID: LO/07).
- * Title: Display critical insight into one-on-one, family and community dynamics and value systems (ID: LO/03).
- * Title: Demonstrate a critical understanding of the inter-relationships between social justice, equity and democracy (ID: HSS02).
- * Title: Demonstrate an understanding of how scientific skills and knowledge could contribute to sustainable use of resources (ID: NS#4).

General Education and Training Certificate: Conservation
NQF1 – 130 credits

Fundamental				Core				Elective			
Unit standard title	Unit nr. as on SAQA's website.	Level	Credit	Unit standard title	Unit nr. as on SAQA's website.	Level	Credit	Unit standard title	Unit nr. as on SAQA's website.	Level	Credit
Cluster of standards for communication and language studies. <ul style="list-style-type: none"> Show a critical awareness of language usage. Engage with aesthetic, affective, cultural, and social values in texts. Identify, access, use and present information. Use appropriate communication skills, conventions and structure for specific purposes and situations. Explore and use a variety of strategies to learn. Engage with meaning, organisation and structure in texts. 	COM001	1	3	Understand the nature and importance of conservation.		1	5	Demonstrate an understanding of how scientific skills and knowledge could contribute to sustainable use of resources.	NS#4	1	2
	COM002	1	3								
	COM003	1	4								
	COM004	1	4								
	COM005	1	3								
	COM006	1	3								
Cluster of standards for Mathematical literacy, Mathematics and Mathematical Sciences. <ul style="list-style-type: none"> Demonstrate understanding about ways of working with whole numbers. Demonstrate understanding about ways of working with positive rational numbers. Demonstrate understanding about ways of working with integers. Recognise and work with patterns. Use and express generalisations of patterns in various contexts. Critically analyse how maths is used in social, political and economic relations. Work with measurement in a variety of contexts. Collect, analyse, use and communicate numerical data. Use mathematical models to describe and represent relationships between quantities in a variety of ways. Use algebraic notation, conventions and terminology to solve problems. Analyse, interpret and give meaning to mathematical models in a variety of ways and in different contexts. 	Math 001	1	2	Develop personal conservation ethics.		1	3	Collect field specimens.	CS11	2	2
	Math 002	1	1								
	Math 003	1	1								
	Math 004	1	2								
	Math 005	1	2								
	Math 006	1	2								
	Math 007	1	2								
	Math 008	1	2								
	Math 009	1	3								
	Math 010	1	3								
	Math 011	1	3								

in different contexts.												
▪ Use maps to access and communicate information concerning routes, location and direction.	Math 012	1	1									
▪ Describe and represent objects and the environment in terms of shape, space, time and motion.	Math 013	1	2									
▪ Analyse cultural products and processes as representations of shape, space and time.	Math 014	1	2									
Use basic learning and research skills.		1	4	Identify community issues in relation to conservation.		1	4	Carry out the harvesting of fauna.	CS08	2	3	
Practice effective self-management skills.	LO06	1	2	Apply basic safety principles in the context of conservation.		1	3	Carry out the harvesting of flora.	CS09	2	3	
Understand the world of work.		1	5	Perform basic infrastructure maintenance.	CS04	2	12	Identify and monitor local wildlife.	CS06	2	8	
Demonstrate a critical understanding of the role and impact of technology in society.	TECH 001	1	3					Combat soil erosion.	CS12	2	2	
Identify and select appropriate technology.		1	1					Combat problem plants.	CS13	2	3	
Demonstrate an understanding of basic accounting	EMS 005	1	4									
Identify, analyse and select various business opportunities.	SMME 02	1	3									
Demonstrate an understanding of a general business plan and adapt it to a selected business idea.	SMME 03	1	7									
Understand human physical development, health and sexuality and their consequences.	LO02	1	2									
Demonstrate skills that relate to a safe and secure environment.	LO07	1	2									
Display critical insight into one-on-one, family and community dynamics and value systems.	LO03	1	2									
Demonstrate a critical understanding of the inter-relationships between social justice, equity and democracy.	HSS02	1	4									
Identify personal values and ethics in the workplace.		1	4									
Show awareness of own social responsibilities.		1	1									
TOTAL			80				27				23	

1. Title: Use basic learning and research skills.
2. Title: Understand the world of work.
3. Title: Identify and select appropriate technology.
4. Title: Identify personal values and ethics in the workplace.
5. Title: Show awareness of own social responsibilities.
6. Title: Understand the nature and importance of conservation.
7. Title: Develop personal conservation ethics.
8. Title: Identify community issues in relation to conservation.
9. Title: Apply basic safety principles in the context of conservation.

Unit Standards at NQF Level 2

- * Title: Perform basic infrastructure maintenance (ID: CS04)
- * Title: Collect field specimens (ID: CS11).
- * Title: Carry out the harvesting of fauna (ID: CS08)
- * Title: Carry out the harvesting of flora (ID: CS09)
- * Title: Identify and monitor local wildlife (ID: CS06)
- * Title: Combat soil erosion (ID: CS12)
- * Title: Combat problem plants (ID: CS13)

Unit standards titles and specific outcomes at NQF level 1

- * Title: Show a critical awareness of language usage (ID: COM 001).
- * Title: Engage with esthetic, affective, cultural, and social values in texts (ID: COM 002).
- * Title: Identify, access, use and present information (ID: COM 003).
- * Title: Use appropriate communication skills, conventions and structure for specific purposes and situations (ID: COM 004).
- * Title: Explore and use a variety of strategies to learn (ID: COM 005).
- * Title: Engage with meaning, organisation and structure in texts (ID: COM 006).
- * Title: Demonstrate understanding about ways of working with whole numbers (ID: Math 001).
- * Title: Demonstrate understanding about ways of working with positive rational numbers (ID: Math 002).
- * Title: Demonstrate understanding about ways of working with integers (ID: Math 003).
- * Title: Recognise and work with patterns (ID: Math 004).
- * Title: Use and express generalizations of patterns in various contexts (ID: Math 005).
- * Title: Critically analyse how maths is used in social, political and economic relations (ID: Math 006).
- * Title: Work with measurement in a variety of contexts (ID: Math 007).
- * Title: Collect, analyse, use and communicate numerical data (ID: Math 008).
- * Title: Use mathematical models to describe and represent relationships between quantities in a variety of ways (ID: Math 009).
- * Title: Use algebraic notation, conventions and terminology to solve problems (ID: Math 010).
- * Title: Analyse, interpret and give meaning to mathematical models in a variety of ways and in different contexts (ID: Math 011).
- * Title: Use maps to access and communicate information concerning routes, location and direction (ID: Math 012).
- * Title: Describe and represent objects and the environment in terms of shape, space, time and motion (ID: Math 013).
- * Title: Analyse cultural products and processes as representations of shape, space and time (ID: Math 014).
- * Title: Practice effective self-management skills (ID: LO/06).
- * Title: Demonstrate a critical understanding of the role and impact of technology in society (ID: TECH001).
- * Title: Demonstrate an understanding of basic accounting (ID: EMS 005).

- * Title: Identify, analyse and select various business opportunities (ID: SMME 002).
- * Title: Demonstrate an understanding of a general business plan and adapt it to a selected business idea (ID: SMME 003).
- * Title: Understand human physical development, health and sexuality and their consequences (ID: LO/02)
- * Title: Demonstrate skills that relate to a safe and secure environment (ID: LO/07).
- * Title: Display critical insight into one-on-one, family and community dynamics and value systems (ID: LO/03).
- * Title: Demonstrate a critical understanding of the inter-relationships between social justice, equity and democracy (ID: HSS02).
- * Title: Demonstrate an understanding of how scientific skills and knowledge could contribute to sustainable use of resources (ID: NS#4).

1. Title: Use basic learning and research skills.

Specific outcome 1. Organise time.

Specific outcome 2. Use learning programme material.

Specific outcome 3. Select and use appropriate resources.

Specific outcome 4. Use learning strategies.

Specific outcome 5. Analyse information.

2. Title: Understand the world of work.

Specific outcome 1. List the key features of a workplace.

Specific outcome 2. Identify common features of workplace roles and responsibilities.

Specific outcome 3. Use basic self management in the workplace.

Specific outcome 4. Describe a range of workplaces.

3. Title: Identify and select appropriate technology.

Specific outcome 1. Describe the concept of technology.

Specific outcome 2. Explore skills needed to access different types of technology.

Specific outcome 3. Match technology products and skills to a variety of workplace contexts.

Specific outcome 4. Apply understanding of technology in a specific workplace context.

4. Title: Identify personal values and ethics in the workplace.

Specific outcome 1. Reflect upon a value system.

Specific outcome 2. Explore the need for ethics in the workplace.

Specific outcome 3. Respect the values of others in the workplace.

Specific outcome 4. Identify areas where value conflicts could occur in a specific context.

5. Title: Show awareness of own social responsibilities.

Specific outcome 1. Reflect on the idea of an individual's social responsibility.

Specific outcome 2. Identify ways in which social responsibility applies to own context.

6. Title: Understand the nature and importance of conservation.

Specific outcome 1. Describe the scope of conservation.

Specific outcome 2. Describe conservation practices operating in a local context.

Specific outcome 3. Explain why conservation is important.

Specific outcome 4. Describe factors impacting on conservation in the local environment.

Specific outcome 5. List locally scarce resources according to best conservation practices.

7. Title: Develop personal conservation ethics.

Specific outcome 1. Describe the scope of conservation.

Specific outcome 2. Explain different interests and values that could impact upon conservation.

Specific outcome 3. Identify a conservation issue in a local context that shows different value systems.

Specific outcome 4. Evaluate one's own contribution to conservation in a local context.

Specific outcome 5. Understand other people's actions and attitudes towards conservation issues in light of their own value systems.

Specific outcome 6. Describe ways in which one's own behaviour may be changed after evaluating one's impact on the environment.

8. Title: Identify community issues in relation to conservation.

Specific outcome 1. Show an understanding of what makes up different types of communities.

Specific outcome 2. Describe ways in which communities may be affected by conservation interventions in a local context.

Specific outcome 3. Describe ways in which conservation may be affected by communities in a local context.

Specific outcome 4. Identify and explain the different types of agreements that communities and conservation bodies may enter into at a local level.

9. Title: Apply basic safety principles in the context of conservation.

Specific outcome 1. Identify hazardous situations relevant to the learner's environment.

Specific outcome 2. List standard safety precautions that apply across a range of local situations.

Specific outcome 3. Apply safety procedures to oneself in the conservation workplace context.

Unit standards titles and specific outcomes at NQF level 2

- * Title: Perform basic infrastructure maintenance (ID: CS04)
- * Title: Collect field specimens (ID: CS11).
- * Title: Carry out the harvesting of fauna (ID: CS08)
- * Title: Carry out the harvesting of flora (ID: CS09)
- * Title: Identify and monitor local wildlife (ID: CS06)
- * Title: Combat soil erosion (ID: CS12)
- * Title: Combat problem plants (ID: CS13)

No. 453

19 April 2002

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

Government Communications and Information Systems

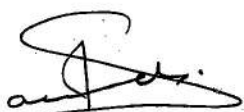
Registered by NSB 04, Communication Studies and Language, publishes the following unit standard for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the unit standard upon which qualifications are based. The unit standards can be accessed via the SAQA web-site at www.saga.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, 659 Pienaar street, Brooklyn, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 14 May 2002***. All correspondence should be marked **Standards Setting – SGB for Government Communications and Information Systems** 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 – 482 0907



PP SAMUEL B.A. ISAACS
EXECUTIVE OFFICER

SOUTH AFRICAN QUALIFICATIONS AUTHORITY**GOVERNMENT COMMUNICATIONS
UNIT STANDARDS FOR:****POST GRADUATE DEGREES IN PUBLIC SERVICE COMMUNICATION PRACTICE
(NQF LEVELS 6 - 8)****Field:** Communication Studies and Language**Sub-field:** Communications**Purpose of Unit Standards**

The standards generated below could be part of any post-graduate qualification in Public Service Communication Practice as an elective, fundamental or core component at NQF levels 6 - 8. It can also be used for government departments to assess employee's abilities with regard to government requirements and for job recruitment purposes. Learners accredited with these unit standards will be able to operate successfully in an environment where theoretical knowledge will be effectively applied in the workplace.

Unit standard title for NQF level 5

Apply government communication processes and assess communication effects

Unit standard title for NQF level 6

Develop and produce information products for government
Develop and manage government communication campaigns
Formulate and coordinate government communication

Unit standard titles for NQF level 7

Manage government communication processes and strategies

Direct, coordinate and conduct research into government communication

Establish, develop and manage media relationships to promote the image of government

Develop Government communication policies, strategies and processes.

Unit standard title and specific outcomes at NQF level 5**1. Title: Apply government communication processes and assess communication effects (Credits 5)**

Specific Outcome 1.1: Identify and explain communication models

Specific Outcome 1.2: Apply communication processes

Specific Outcome 1.3: Analyse, interpret and assess communication processes

Unit standard titles and specific outcomes at NQF level 6**2. Title: Develop and produce information products for government (Credits 4)**

Specific Outcome 2.1: Identify government information requirements

Specific Outcome 2.2: Provide government information solutions

Specific Outcome 2.3: Implement and follow up solutions

3. Title: Develop and manage government communication campaigns (Credits 6)

Specific Outcome 3.1: Identify communication campaign requirements

Specific Outcome 3.2: Develop communication campaigns

Specific Outcome 3.3: Manage communication campaigns

4. Title: Formulate and coordinate government communication (Credits 12)

Specific Outcome 4.1: Research government communication requirements

Specific Outcome 4.2: Develop government communication programme

Specific Outcome 4.3: Coordinate government communication programme

Unit standard titles and specific outcomes at NQF level 7**5. Title: Manage government communication processes and strategies (Credits 5)**

- Specific Outcome 5.1: Analyse communication and processes and strategies
Specific Outcome 5.2: Select communication processes and strategies
Specific Outcome 5.3: Evaluate communication processes and strategies

6. Title: Direct, coordinate and conduct research into government communication (Credits 3)

- Specific Outcome 6.1: Direct research into government communication
Specific Outcome 6.2: Coordinate research into government communication
Specific Outcome 6.3: Conduct research into government communication

7. Title: Establish, develop and manage media relationships to promote the image of government (Credits 5)

- Specific Outcome 7.1: Identify and monitor media ownership and operational culture
Specific Outcome 7.2: Develop and manage mechanisms for interacting with the media
Specific Outcome 7.3: Enhance media access and news coverage to promote government image
Specific Outcome 7.4: Monitor and evaluate media coverage
Specific Outcome 7.5: Advise and prepare management and spokespersons on media experiences

8. Title: Develop Government communication policies, strategies and processes (Credits 4)

- Specific Outcome 8.1: Develop government communication policies
Specific Outcome 8.2: Develop government communication strategies
Specific Outcome 8.3: Develop government communication processes

No. 454

19 April 2002

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

Environmental Educators

Registered by NSB 05, Education, Training and Development, publishes the following qualifications and unit standard for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification and unit standard upon which qualifications are based. The full qualification and unit standards can be accessed via the SAQA web-site at www.saqa.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, 659 Pienaar street, Brooklyn, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 14 May 2002***. All correspondence should be marked **Standards Setting – SGB for Environmental Educators** 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 – 482 0907



PR SAMUEL B.A. ISAACS
EXECUTIVE OFFICER

**National Certificate in Environmental Education, Training and Development
Practice- NQF Level 4**

Field: NSB 05: Education, Training and Development

Sub field: Adult Learning

Level: 4

Credits: 120 Credits

Issue date:

Review date:

Rationale for the qualification

This level 4 qualification was designed in order to provide a much-needed entry-level qualification for environmental education practitioners. Many people working in community projects, non-governmental organizations and conservation agencies have been practising as environmental educators without formal training or qualifications. Despite considerable experience and insight, without a Further Education and Training Certificate (FETC) they are unable to gain entry to level 5 qualifications. This level 4 qualification will provide these practitioners with an FETC facilitating entry to qualifications in the Higher Education and Training (HET) band.

The level 4 unit standards will enable organizations training and employing full-time or part-time environmental educators to structure training according to nationally recognized standards.

Purpose of the qualification

This qualification will be useful for people working at the level of assistant environmental education (EE) practitioners or interns. They will ideally work under ongoing supervision of a more experienced practitioner.

People with this qualification will be able to:

- ♦ Assist a more experienced EE practitioner to organize, administer and implement

environmental learning programmes, action projects or campaigns

- ◆ Organize and carry out particular activities within an environmental learning programme, action project or campaign
- ◆ Draw on the local environmental network in order to research or address a particular environmental topic or issue

Practitioners will be qualified to teach in particular contexts in which they have environmental knowledge, understanding and insight; for example in nature reserves and protected areas, cultural and natural heritage sites, industry and local communities. They will work with others to make a meaningful contribution to the environment through education.

This qualification provides an opportunity for existing EE practitioners to acquire an FETC in order to study further.

Access to the qualification

Access to the qualification is open

Learning Assumed to be in place

The learning assumed to be in place is a GETC or RPL equivalent. Other learning assumed to be in place is detailed in specific unit standards. Different combinations of unit standards require different learning to be in place. For example, in the case of in-service training, the particular combination of unit standards will relate to the needs of the particular workplace, e.g. nature reserve, community-based development project or industrial plant.

Exit Level Outcomes

The unit standards making up this qualification reflect aspects of all the roles of the professional educator, as defined in the *Norms and Standards for Educators* (February 2000):

- ◆ Learning mediator
- ◆ Interpreter and designer of learning programmes and materials
- ◆ Leader, administrator and manager
- ◆ Scholar, researcher and lifelong learner
- ◆ Community, citizenship and pastoral role
- ◆ Assessor
- ◆ Learning area / subject / discipline / phase specialist

Furthermore, they also promote the development of the foundational, practical and reflexive components of 'applied competence' described in the same document.

A practitioner with this qualification will be able to:

- ◆ Work under supervision to prepare an environmental learning programme
- ◆ Work with others to implement an environmental learning programme
- ◆ Participate actively in a local environmental action project
- ◆ Fulfill administrative requirements of an environmental learning programme or action project
- ◆ Network locally in order to source information, advice or support concerning an environmental issue or risk

- ♦ Reflect on his or her own facilitation performance as an environmental education practitioner
- ♦ Work ethically and professionally as an environmental education practitioner
- ♦ Apply knowledge of environmental ethics within their personal experience
- ♦ Develop a personal code of ethics for sustainable living
- ♦ Demonstrate an understanding of the relevance of key policies to environmental education
- ♦ Identify and support learners with special needs
- ♦ Organize him/herself in the workplace
- ♦ Function in a team (elective)

In terms of embedded knowledge, people with this qualification will demonstrate knowledge and understanding of:

- ♦ Foundational concepts, principles, theories and processes in the fields of environmental studies, environmental management and development;
- ♦ Foundational concepts, principles, theories and processes in the fields of education in general and environmental education in particular.

The draft level descriptors for level 4 qualifications, including both applied competence and autonomy of learning, have informed development of the unit standards making up this qualification (Government Gazette No. 22869, 3 December 2001, p. 43).

Associated Assessment Criteria

The exit level outcomes are equivalent to the unit standards for this qualification. Assessment criteria are detailed in each of the unit standards and therefore the SGB did not produce additional assessment criteria for the exit level outcomes.

International Comparability

It appears that environmental education qualifications and unit standards are not included in international qualifications frameworks. Possible reasons for this include:

- ♦ Most of the international qualification frameworks are restricted to *technical* rather than *academic* qualifications; formal qualifications in environmental education are often educational specializations at postgraduate level.
- ♦ Non-degree courses in environmental education are often short courses or workshops, which do not count towards formal qualifications.
- ♦ The field of environmental education is a relatively new field internationally. It has received much attention since the 1992 Rio Earth Summit in particular, when more than 100 governments made commitments to the implementation of Agenda 21. UNESCO has described South Africa as being on the 'cutting edge' of incorporating environmental education qualifications into national policy systems.

While environmental education qualifications *per se*, are not registered on other national qualifications frameworks, a number of diploma and degree programmes do exist internationally. However, no formal courses were found at levels below initial teacher education, which is equivalent to a qualification at level 6 or 7 on the NQF. A survey of environmental education courses from the Asia-Pacific region, New

Zealand and the United States of America indicated that the unit standards covered in this level 4 qualification reflect, at an introductory level, the knowledge, understanding, skills and value orientations covered in international courses.

Integrated Assessment

Assessment is not a single event but rather a structured process of gathering evidence and making judgements of learners' performance in relation to national standards. It is not within the scope of the SGB to prescribe forms of assessment or assessment instruments. However, trainers, employers and assessors should bear in mind the principles of outcomes-based assessment when developing learning programmes and courses, and when monitoring and assessing learner competence. The Assessors SGB within the Education, Training and Development Field stresses that assessment should be appropriate, fair, manageable, integrated into work or learning, valid, direct, authentic, sufficient, systematic, open and consistent

Assessment is concerned with the *quality* of the candidate's performance, the *quantity* of products produced and the candidate's *knowledge* and *understanding*. The assessment criteria in the unit standards provide adequate guidance for professional assessors to make informed judgements regarding learner performance. If assessment indicates that the candidate is not yet competent in a particular unit standard, s/he should be allowed further time and opportunities to develop the necessary competence.

In order to ensure that judgements are reliable, assessors should collect evidence from a variety of sources and in a number of ways, e.g. direct observation, role-plays and simulations, interviews, review of portfolios of work, testimonies from third parties, and formal written, oral or skills tests.

Where possible, assessment of performance should be carried out in *authentic* situations and in an *integrated* fashion, enabling the simultaneous assessment of multiple specific outcomes and assessment criteria. So, for example, by working with the candidate during the course of preparing and implementing an environmental learning programme, the supervisor will be able to assess not only his/her competence as an assistant EE practitioner, but also his/her organizational, administrative and teamwork abilities. Furthermore, by observing how the candidate participates in an environmental action project, the supervisor will be able to assess how well the candidate understands the particular issue and related environmental concepts and processes.

Recognition of Prior Learning

The assessment criteria in the unit standards are, for the most part, performance-based, rather than descriptions of required knowledge. This qualification could therefore be awarded as a result of RPL in the workplace.

Articulation possibilities

Unit standards from the National Certificate in Environmental Education, Training and Development Practice, NQF Level 4 may be chosen as electives by a number of qualifications in, for example, sub-fields Conservation, Social Ecology, ABET and ECD. Similarly, National Certificate candidates may draw on unit standards from these and other related fields and sub-fields. The openness of the elective category allows learners to move horizontally. Although the level 4 qualification is not a *pre-requisite* for further qualifications in EETDP, the level 5 Certificate builds upon the foundation laid by this qualification and requires competence in a number of level 4 unit standards.

Moderation Options

Moderation must include both internal and external moderation of assessments at exit points of the qualification. Moderation should encompass achievement of the competence described in both individual unit standards as well as the integrated competence described in the qualification.

Criteria for the registration of assessors

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. Universities, colleges of education and organizations with well-established environmental education programmes should apply for accreditation in order to be able to carry out these functions. Co-operation between potential groups of assessors will be required in order to standardize assessment, moderation and the awarding of this qualification.

Qualification Matrix: NQF Level 4

Level 4		Level 4		Level 4	
<i>Fundamental</i>		<i>Core</i>		<i>Elective</i>	
Language and Communication					
Engage in sustained oral communication and evaluate spoken texts – 8974	5	Organize oneself in workplace – 8616 Work under supervision to prepare an environmental learning programme. Work with others to implement an environmental learning programme.	3 4 3	A minimum of 18 credits can be selected from any field of learning relevant to the context or responsibilities of the assistant environmental education officer. These include: Conservation management	
Read, analyse and respond to a variety of texts- 8975	5	Participate actively in a local environmental action project. Fulfill administrative requirements of an environmental learning programme or action project.	8 3	Natural and cultural resource management	18
Write for a wide range of contexts- 8976	5	Network locally in order to source information, advice or support concerning an environmental issue or risk. Reflect on own facilitation performance as an environmental education practitioner.	5 5	Environmental studies	18
Use language and communication in occupational learning programmes-8979	5	Work ethically and professionally as an environmental education practitioner. Apply introductory knowledge of environmental ethics in the context of personal experience. Demonstrate an understanding of the relevance of key policies to environmental education. Demonstrate knowledge of environmental systems and ecology Identify and describe learning processes. Identify and support learners with special needs	3 4 2 20 3 4	Information and communications technology or A minimum of 18 credits from Education, Training and Development unit standards: Plan a learning event- 7381 Plan a learning programme- 9951 Facilitate an adult learning event- 7384 Manage a learning programme-9935	18 8 18 16 12
Mathematical Literacy					
Use mathematics to investigate and monitor the financial aspects of personal, business, national issues-8983	6				
Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life-related problems- 9015	6				
Represent, analyse and calculate shape and motion in 2- and 3-dimensional space in different contexts- 9016	4				
TOTAL	36		67		18

**UNIT STANDARDS IN NATIONAL CERTIFICATE IN ENVIRONMENTAL
EDUCATION, TRAINING AND DEVELOPMENT PRACTICE****UNIT STANDARDS ON NQF LEVEL 2**

- 1. Title:** Organize oneself in workplace - 8616

UNIT STANDARDS ON NQF LEVEL 4

- 1. Title:** Engage in sustained oral communication and evaluate spoken texts – 8974- 5 credits
- 2. Title:** Read, analyse and respond to a variety of texts- 8975- 5 credits
- 3. Title:** Write for a wide range of contexts- 8976- 5 credits
- 4. Title:** Use language and communication in occupational learning programmes-8979- 5 credits
- 5. Title:** Use mathematics to investigate and monitor the financial aspects of personal, business, national issues-8983- 6 credits
- 6. Title:** Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life-related problems- 9015- 6 credits
- 7. Title:** Represent, analyse and calculate shape and motion in 2- and 3-dimensional space in different contexts- 9016- 4 credits
- 8. Title:** Plan a learning event- 7381- 8 credits
- 9. Title:** Plan a learning programme- 9951- 18 credits
- 10. Title:** Facilitate an adult learning event- 7384- 16 credits
- 11. Title:** Manage a learning programme- 9935- 12 credits
- 12. Title:** Work under supervision to prepare an environmental learning programme.
- 13. Title:** Work with others to implement an environmental learning programme.
- 14. Title:** Participate actively in a local environmental action project.
- 15. Title:** Fulfill administrative requirements of an environmental learning programme or action project.
- 16. Title:** Network locally in order to source information, advice or support concerning an environmental issue or risk.
- 17. Title:** Reflect on own facilitation performance as an environmental education practitioner.
- 18. Title:** Work ethically and professionally as an environmental education

practitioner.

- 19. Title:** Apply introductory knowledge of environmental ethics in the context of personal experience.
- 20. Title:** Demonstrate an understanding of the relevance of key policies to environmental education.
- 21. Title:** Demonstrate knowledge of environmental systems and ecology.
- 22. Title:** Identify and describe learning processes.
- 23. Title:** Identify and support learners with special needs

UNIT STANDARDS AND SPECIFIC OUTCOMES IN NATIONAL CERTIFICATE IN ENVIRONMENTAL EDUCATION, TRAINING AND DEVELOPMENT PRACTICE**UNIT STANDARDS ON NQF LEVEL 4**

1. Title: Work under supervision to prepare an environmental learning programme

Specific Outcome 1.1: Work closely with others to plan and prepare an environmental learning programme

Specific Outcome 1.2: Source and prepare existing learning support materials

Specific Outcome 1.3: Identify and fulfill own learning needs relating to the environmental learning programme

2. Title: Work with others to implement an environmental learning programme

Specific Outcome 1.1: Assist with the implementation of an environmental learning programme

Specific Outcome 1.2: Mediate environmental learning effectively during a particular activity

Specific Outcome 1.3: Assist with evaluation of the environmental learning programme

3. Title: Participate actively in a local environment action project

Specific Outcome 1.1: Work with others to identify and understand a local environmental issue or risk

Specific Outcome 1.2: Participate in developing an action plan

Specific Outcome 1.3: Work with others to address an aspect of a local environmental issue or risk

Specific Outcome 1.4: Critically reflect on the experience with others, identifying opportunities for improvement

4. Title: Fulfill administrative requirements of an environmental learning programme or action project

Specific Outcome 1.1: Implement existing administrative systems in the workplace

Specific Outcome 1.2: Organize and maintain the learning environment

Specific Outcome 1.3: Handle petty cash efficiently and accountably

Specific Outcome 1.4: Keep records and prepare reports

5. Title: Network locally in order to source information, advice and support concerning an environmental issue or risk

Specific Outcome 1.1: Identify local sources of information and support concerning an environmental issue or risk

Specific Outcome 1.2: Contact relevant sources and obtain information, advice or support

Specific Outcome 1.3: Keep records of contacts and information

6. Title: Reflect on own facilitation performance as an environmental education practitioner

Specific Outcome 1.1: Reflect critically on implementation of an environmental learning programme or action project

Specific Outcome 1.2: Adapt activities based on evaluation

Specific Outcome 1.3: Identify self-development needs and take responsibility for fulfilling these

7. Title: Work ethically and professionally as an environmental education practitioner

Specific Outcome 1.1: Describe behaviour expected of an environmental education practitioner

Specific Outcome 1.2: Describe what is understood by professional conduct

Specific Outcome 1.3: Develop a set of guiding principles for ethical and professional conduct, and conduct oneself accordingly

8. Title: Apply introductory knowledge of environmental ethics in the context of personal experience

Specific Outcome 1.1: Demonstrate introductory knowledge and understanding of environmental ethics as it relates to practice.

Specific Outcome 1.2: Apply introductory knowledge of environmental ethics to the analysis and resolution of a concrete environmental problem.

Specific Outcome 1.3: Describe the environmental value positions that inform policies and practices affecting the environment.

Specific Outcome 1.4: Apply introductory knowledge of environmental ethics to personal lifestyle choices and/or workplace practice.

9. Title: Demonstrate an understanding of the relevance of key policies to environmental education

Specific Outcome 1.1: Demonstrate knowledge of paragraphs 24 and 29 of the Constitution of South Africa, and understand their implications for environmental education

Specific Outcome 1.2: Demonstrate knowledge of the 20 principles of the National Environmental Management Act (NEMA) and understand their relevance to environmental education

Specific Outcome 1.3: Demonstrate knowledge of the corporate mission and vision of their organization and the role of environmental education in achieving these aims

10. Title: Demonstrate knowledge of environmental systems and ecology

Specific Outcome 1.1: Demonstrate an understanding of the environment as a complex of interacting biophysical, social, economic, and political systems.

Specific Outcome 1.2: Describe the Earth's physical systems in relation to energy, matter and processes.

Specific Outcome 1.3: Describe the Earth's ecosystems and biodiversity in relation to energy and matter.

Specific Outcome 1.4: Analyze human-environment relations in terms of use of energy and matter.

11. Title: Identify and describe learning processes

Specific Outcome 1.1: Observe and report on different learning interactions

Specific Outcome 1.2: Identify and describe the role of the educator, and the educator-learner relationship

12. Title: Identify and support learners with special needs

Specific Outcome 1.1: Describe a range of special needs that may be encountered during an environmental learning programme or action project

Specific Outcome 1.2: Recognize and assist learners who have special needs during an environmental learning programme or action project

No. 455

19 April 2002

National Certificate in Environmental Education, Training and Development Practice-NQF Level 5**Field:** NSB 05: Education, Training and Development**Sub field:** Adult Learning**Level:** 5**Credits:** 120**Issue date:****Review date:****Rationale for the qualification**

Many environmental educators (including volunteers and part-time guides) are already in possession of an FETC or more advanced qualification, but lack a specific environmental education qualification. The NQF provides for a National Certificate of 120 credits at Level 5. This unit standards-based National Certificate in Environmental Education, Training and Development Practice (EETDP) (NQF Level 5) is a flexible and accessible means whereby existing or aspirant environmental education practitioners can obtain a basic qualification in the field.

The arguments put forward in the rationale for separate level 5 qualifications in the ABET sub-field are also relevant here, and include:

- ♦ The demand in the Environmental Education, Training and Development sector for a one-year qualification of 120 credits at Level 5
- ♦ Cost and logistical obstacles that prevent many people enrolling for a two-year course of study
- ♦ The need to accredit completed study, should a learner, because of unforeseen circumstances, have to withdraw from the Diploma course after one year.

Although the Level 5 Certificate may be offered as a full-time course, it is more likely that candidates will complete this qualification through part-time, in-service study. The level 5 unit standards will enable organisations training and employing environmental educators to structure training programmes in accordance with nationally recognised standards, and to provide this training at a level in line with their goals and resources.

Purpose of the qualification

The National Certificate in Environmental Education, Training and Development Practice (EETDP) (NQF Level 5) will prepare candidates to function as entry-level environmental education practitioners. It will apply in particular to part-time practitioners working in environmental education centres and to people who may be employed primarily in fields other than education, but who may develop an environmental education role in their workplace, e.g. field rangers, outreach officers, interpretive officers, etc.

People qualified with the National Certificate in EETDP (NQF Level 5) will be able to select and adapt *existing* environmental learning programmes, and justify their choices in terms of principles of environmental education and in response to issues of environmental justice and sustainability. When qualified, they will be able to plan, organize, implement and review a limited selection of environmental learning events using an active learning approach. They will also be able to select, adapt and use learning support materials to enrich the learning experience.

Given regular supervision in a structured environment, people qualified at this level will be able to make a meaningful contribution to environmental change through education. They will be able to work with others to undertake environmental action projects or facilitate environmental learning programmes. They will be able to work in a variety of contexts and workplaces, including environmental education centers, cultural and natural heritage sites (e.g. nature reserves, protected areas, museums, botanical and zoological gardens), and community and industrial settings. They may also be able to function as teachers' aides in formal education settings in, for example, assisting in field trips.

Access to the qualification

Access to the qualification is fairly open. Candidates will be required to demonstrate an Further Education and Training Certificate (FETC) or RPL equivalent. Unit standards, qualifications and/or experience in fields such as environment, conservation or development would be an advantage.

Registration for the National Certificate in EETDP (Level 5) does not assume completion of the National Certificate in EETDP (Level 4). In fact, it is unlikely that a candidate will complete both certificates. However, some of the unit standards from the Level 4 Certificate are relevant to this qualification and they have therefore been included.

The National Certificate qualification is not a prerequisite for the National Diploma. However, the National Diploma is designed to incorporate the National Certificate. Therefore, candidates for the National Diploma qualification will acquire the credits required for completion of the National Certificate whether their provider organisation decides to offer that exit point or not. The National Certificate qualification will require the equivalent of one year of full-time study.

Learning Assumed to be in place

The learning assumed to be in place is an FETC or RPL equivalent.

Other learning assumed to be in place is detailed in specific unit standards. Different combinations of unit standards require different learning to be in place. For example, in the case of in-service training, the particular combination of unit standards will relate to the needs of the particular workplace, e.g. nature reserve, community-based development project, industrial plant.

Exit Level Outcomes

People who qualify with the **National Certificate in Environmental Education, Training and Development Practice (NQF Level 5)** will be able to:

- ◆ Demonstrate knowledge of environmental education goals, principles and methods and their appropriateness in different contexts
- ◆ Select, plan and adapt a contextually-relevant environmental learning programme
- ◆ Implement and evaluate an environmental learning programme
- ◆ Select, adapt and use existing environmental learning support materials and develop own supplementary learning aids
- ◆ Network broadly in order to source information and support around a key environmental issue or risk and recommend possible solutions
- ◆ Research and analyze a local environmental issue in terms of principles of environmental justice and sustainability
- ◆ Apply appropriate social protocols in the workplace and community
- ◆ Apply fundamental knowledge of environmental ethics to a field of work or study
- ◆ Demonstrate a general understanding of people-environment relationships and current environmental challenges
- ◆ Review a variety of approaches to learning, teaching and evaluation.

The unit standards making up this qualification reflect aspects of all the roles of the professional educator, as defined in the *Norms and Standards for Educators* (February 2000):

- ◆ Learning mediator
- ◆ Interpreter and designer of learning programmes and materials
- ◆ Leader, administrator and manager
- ◆ Scholar, researcher and lifelong learner
- ◆ Community, citizenship and pastoral role
- ◆ Assessor
- ◆ Learning area / subject / discipline / phase specialist

Furthermore, they also promote the development of the foundational, practical and reflexive components of 'applied competence' described in the same document.

Associated Assessment Criteria

The exit level outcomes are equivalent to the unit standards for this qualification. Assessment criteria are detailed in each of the unit standards and therefore the SGB did not produce additional assessment criteria for the exit level outcomes.

International Comparability

It appears that environmental education qualifications and unit standards are not included in international qualifications frameworks. Possible reasons for this include:

- ◆ Most of the international qualification frameworks are restricted to technical rather than academic qualifications; formal qualifications in environmental education are often educational specializations at

postgraduate level

- ♦ Non-degree courses in environmental education are often short courses or workshops, which do not count towards formal qualifications.
- ♦ The field of environmental education is a relatively new field internationally. It has received much attention since the 1992 Rio Earth Summit in particular, when more than 100 governments made commitments to the implementation of Agenda 21. UNESCO has described South Africa as being on the 'cutting edge' of incorporating environmental education qualifications into national policy systems.

While environmental education qualifications *per se*, are not registered on other national qualifications frameworks, a number of diploma and degree programmes do exist internationally. However, no formal courses were found at levels below initial teacher education, which is equivalent to a qualification at level 6 or 7 on the NQF. A survey of environmental education courses from the Asia-Pacific region, New Zealand and the United States of America indicated that the unit standards covered in this level 5 qualification reflect, at an preliminary level, the knowledge, understanding, skills and value orientations covered in the international courses.

Integrated Assessment

Assessment is not a single event but rather a structured process of gathering evidence and making judgements of learners' performance in relation to national standards. It is not within the scope of the SGB to prescribe forms of assessment or assessment instruments. However, trainers, employers and assessors should bear in mind the principles of outcomes-based assessment when developing learning programmes and courses, and when monitoring and assessing learner competence. The Assessors SGB within the Education, Training and Development Field stresses that assessment should be appropriate, fair, manageable, integrated into work or learning, valid, direct, authentic, sufficient, systematic, open and consistent.

Assessment is concerned with the *quality* of the candidate's performance, the *quantity* of products produced and the candidate's *knowledge* and *understanding*. The assessment criteria in the unit standards provide adequate guidance for professional assessors to make informed judgements regarding learner performance. If assessment indicates that the candidate is not yet competent in a particular unit standard, s/he should be allowed further time and opportunities to develop the necessary competence.

In order to ensure that judgements are reliable, assessors should collect evidence from a variety of sources and in a number of ways, e.g. direct observation, role-plays and simulations, interviews, review of portfolios of work, testimonies from third parties, and formal written, oral or skills tests.

Where possible, assessment of performance should be carried out in *authentic* situations and in an *integrated* fashion, enabling the simultaneous assessment of multiple specific outcomes and assessment criteria. So, for example, by working with the candidate during the course of preparing and implementing an environmental learning programme, the supervisor will be able to assess not only his/her competence as an assistant EE practitioner, but also his/her organisational, administrative and teamwork abilities. Furthermore, by observing how the candidate participates in an environmental action project, the supervisor will be able to assess how well the candidate understands the particular issue and related environmental concepts and processes.

Recognition of Prior Learning

The assessment criteria in the unit standards are, for the most part, performance-based, rather than descriptions of required knowledge. This qualification could therefore be awarded as a result of RPL in the workplace.

Articulation possibilities

These qualifications have been designed to articulate with level 4 and level 6 qualifications in the sub-field Environmental Education, Training and Development Practice. They have been developed with reference to existing and draft qualifications and unit standards, and draw on unit standards from ABET Educators, Tourism and Conservation.

Related fields and sub-fields will be able to draw on unit standards from this level 5 qualification. For example, where relevant, other ETD sub fields like Schooling, Early Childhood Development, Occupationally Directed Training and ABET Educators may draw on these unit standards in the development of Level 5 qualifications.

The openness of the elective category allows candidates to move horizontally or vertically within the fields of Conservation, Natural Resource Management, Industrial Environment Management and ABET Practice. This should also include the option to choose unit standards in an area of specialisation in the social sciences, natural sciences or environmental sciences.

Moderation Options

Moderation must include both internal and external moderation of assessments at exit points of the qualification. Moderation should encompass achievement of the competence described in both individual unit standards as well as the integrated competence described in the qualification.

Criteria for the registration of assessors

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. Universities, colleges of education and organizations with well-established environmental education programmes should apply for accreditation in order to be able to carry out these functions. Co-operation between potential groups of assessors will be required in order to standardize assessment, moderation and the awarding of this qualification.

Qualification Matrix: NQF Level 5 (Higher Certificate)

Level 5 <i>Fundamental</i>		Level 5 <i>Core</i>		Level 5 <i>Elective</i>	
<p>According to SAQA Regulations (March 1998), 'fundamental learning' means 'that learning which forms the grounding or basis needed to undertake the education, training or further learning required in the obtaining of a qualification.'</p> <p>Individual candidates, learning groups or training institutions may identify areas in which the candidate's fundamental education requires further development, and select appropriate unit standards from other qualifications to a maximum of 24 credits.</p> <p>Areas from which unit standards could be drawn include, but are not limited to:</p> <ul style="list-style-type: none"> ♦ Environmental studies ♦ Workplace communication ♦ Computer literacy ♦ Study skills ♦ Education theory 		<p>Organize oneself in the workplace-8616 3</p> <p>Fulfill administrative requirements of an environmental learning programme or action project 3</p> <p>Reflect on own facilitation performance as an environmental education practitioner 5</p> <p>Work ethically and professionally as an environmental education practitioner 3</p> <p>Demonstrate knowledge of environmental education goals, principles and methods and their appropriateness in different contexts 4</p> <p>Select, plan and adapt a contextually relevant environmental learning programme 6</p> <p>Implement and evaluate an environmental learning programme 6</p> <p>Select, adapt and use existing environmental learning support materials and develop own supplementary learning aids 4</p> <p>Network broadly in order to source information and support around a key environmental issue or risk 4</p> <p>Research and analyze an environmental issue in terms of principles of environmental justice and sustainability and recommend possible solutions 8</p> <p>Apply appropriate social protocols in the workplace and community 4</p> <p>Apply fundamental knowledge of environmental ethics to a field of work or study 6</p> <p>Demonstrate a general understanding of people-environment relationships and current environmental challenges 16</p> <p>Review a variety of approaches to learning, teaching and evaluation 4</p> <p>Identify and support learners with special needs 4</p>		<p>A minimum of 16 credits can be selected from any fields of learning relevant to the context or responsibilities of the assistant environmental education officer. These may include:</p> <p>Conservation management 16</p> <p>Natural and cultural resource management 16</p> <p>Environmental studies 16</p> <p>Information and communications technology</p> <p style="text-align: center;">Or</p> <p>A minimum of 16 credits from Education, Training and Development unit standards:</p> <p>Organise a programme of learning-Registered 8</p> <p>Facilitate a programme of learning-Registered 24</p> <p>Plan and conduct assessment of learning outcomes- 7978 15</p> <p>Evaluate a course- 9937 8</p>	
TOTAL	24		80		16

**UNIT STANDARDS IN NATIONAL CERTIFICATE IN ENVIRONMENTAL
EDUCATION, TRAINING AND DEVELOPMENT PRACTICE****UNIT STANDARDS ON NQF LEVEL 2**

- 1. Title:** Organize oneself in the workplace-8616

UNIT STANDARDS ON NQF LEVEL 4

- 1. Title:** Fulfill administrative requirements of an environmental learning programme or action project
- 2. Title:** Reflect on own facilitation performance as an environmental education practitioner
- 3. Title:** Work ethically and professionally as an environmental education practitioner

UNIT STANDARDS ON NQF LEVEL 5

- 1. Title:** Organise a programme of learning- Registered- 8 credits
- 2. Title:** Facilitate a programme of learning- Registered- 24 credits
- 3. Title:** Plan and conduct assessment of learning outcomes- 7978- 15 credits
- 4. Title:** Evaluate a course- 9937- 8 credits
- 5. Title:** Demonstrate knowledge of environmental education goals, principles and methods and their appropriateness in different contexts
- 6. Title:** Select, plan and adapt a contextually relevant environmental learning programme
- 7. Title:** Implement and evaluate an environmental learning programme
- 8. Title:** Select, adapt and use existing environmental learning support materials and develop own supplementary learning aids
- 9. Title:** Network broadly in order to source information and support around a key environmental issue or risk
- 10. Title:** Research and analyze an environmental issue in terms of principles of environmental justice and sustainability and recommend possible solutions
- 11. Title:** Apply appropriate social protocols in the workplace and community
- 12. Title:** Apply fundamental knowledge of environmental ethics to a field of work or study
- 13. Title:** Demonstrate a general understanding of people-environment relationships and current environmental challenges

- 14. Title:** Review a variety of approaches to learning, teaching and evaluation
- 15. Title:** Identify and support learners with special needs

UNIT STANDARDS AND SPECIFIC OUTCOMES IN NATIONAL CERTIFICATE IN ENVIRONMENTAL EDUCATION, TRAINING AND DEVELOPMENT PRACTICE**UNIT STANDARDS ON NQF LEVEL 4**

- 1. Title:** Fulfill administrative requirements of an environmental learning programme or action project

Specific Outcome 1.1: Implement existing administrative systems in the workplace

Specific Outcome 1.2: Organize and maintain the learning environment

Specific Outcome 1.3: Handle petty cash efficiently and accountably

Specific Outcome 1.4: Keep records and prepare reports

- 2. Title:** Reflect on own facilitation performance as an environmental education practitioner

Specific Outcome 1.1: Reflect critically on implementation of an environmental learning programme or action project

Specific Outcome 1.2: Adapt activities based on evaluation

Specific Outcome 1.3: Identify self-development needs and take responsibility for fulfilling these

- 3. Title:** Work ethically and professionally as an environmental education practitioner

Specific Outcome 1.1: Describe behaviour expected of an environmental education practitioner

Specific Outcome 1.2: Describe what is understood by professional conduct

Specific Outcome 1.3: Develop a set of guiding principles for ethical and professional conduct, and conduct oneself accordingly

UNIT STANDARDS ON NQF LEVEL 5

- 1. Title:** Demonstrate knowledge of environmental education goals, principles and methods and their appropriateness in different contexts

Specific Outcome 1.1: Demonstrate knowledge of a variety of educational approaches and methods commonly used in environmental education programmes.

Specific Outcome 1.2: Select methods that are appropriate in particular contexts

Specific Outcome 1.3: Justify choices of methods in terms of goals and principles of environmental education

- 2. Title:** Select, plan and adapt a contextually relevant environmental learning programme

- Specific Outcome 1.1:** Develop with stakeholders a framework for an Environmental learning programme
- Specific Outcome 1.2:** Select a contextually-relevant environmental learning Programme
- Specific Outcome 1.3:** Plan, adapt and organize an environmental learning programme
- 3. Title:** Implement and evaluate an environmental learning programme
- Specific Outcome 1.1:** Take responsibility for implementing an environmental Learning programme
- Specific Outcome 1.2:** Ensure effective mediation of environmental learning
- Specific Outcome 1.3:** Implement an environmental learning programme According to principles of outcomes-based education
- Specific Outcome 1.4:** Manage a group of learners appropriately and effectively
- Specific Outcome 1.5:** Evaluate an environmental learning programme
- 4. Title:** Select, adapt and use existing environmental learning support materials and develop own supplementary learning aids
- Specific Outcome 1.1:** Select, adapt and use existing learning support materials in the context of an environmental learning programme
- Specific Outcome 1.2:** Develop and use own supplementary learning aids
- Specific Outcome 1.3:** Evaluate own supplementary learning aids
- 5. Title:** Network broadly in order to source information and support around a key environmental issue or risk
- Specific Outcome 1.1:** Identify key environmental issues and select one issue to research
- Specific Outcome 1.2:** Identify a broad network providing support around an environmental issue
- Specific Outcome 1.3:** Network broadly in order to source information and support
- Specific Outcome 1.4:** Compile networking details and information
- 6. Title:** Research and analyze an environmental issue in terms of principles of environmental justice and sustainability and recommend possible solutions
- Specific Outcome 1.1:** Explore and clarify principles of environmental justice and

sustainability

Specific Outcome 1.2: Analyze a selected environmental issue in terms of principles of environmental justice and sustainability

Specific Outcome 1.3: Discuss and recommend possible solutions

Specific Outcome 1.4: Evaluate proposed solutions in terms of environmental justice and sustainability

7. Title: Apply appropriate social protocols in the workplace and community

Specific Outcome 1.1: Identify features of protocol in a range of social situations

Specific Outcome 1.2: Apply knowledge of social protocols in context

Specific Outcome 1.3: Evaluate and adapt environmental projects and programmes in the light of appropriate social protocols

8. Title: Apply fundamental knowledge of environmental ethics to a field of work or study

Specific Outcome 1.1: Demonstrate fundamental knowledge and understanding Of environmental ethics

Specific Outcome 1.2: Analyze a range of environmental practices and problems and develop a synthesis that illustrates ethical dilemmas associated with environmental issues.

Specific Outcome 1.3: Demonstrate understanding of the environmental value positions reflected in a range of key environmental policies and related procedures.

Specific Outcome 1.4: Develop a code of environmental ethics guiding practice within the field of work or study

9. Title: Demonstrate a general understanding of people-environment relationships and current environmental challenges

Specific Outcome 1.1: Demonstrate knowledge of how people-environment relationships change

Specific Outcome 1.2: Analyze some key human responses to recent environmental challenges

Specific Outcome 1.3: Describe how political, economic and social processes and organizations have influenced environmental

challenges.

Specific Outcome 1.4: Analyze a local biophysical issue from both local and global perspectives.

10. Title: Review a variety of approaches to learning, teaching and evaluation

Specific Outcome 1.1: Observe and review a range of approaches to teaching and learning

Specific Outcome 1.2: Review different approaches to evaluation

11. Title: Identify and support learners with special needs

Specific Outcome 1.1: Describe a range of special needs that may be encountered during an environmental learning programme or action project

Specific Outcome 1.2: Recognize and assist learners who have special needs during an environmental learning programme or action project

No. 456

19 April 2002

**National Diploma in Environmental Education, Training and Development
Practice- NQF Level 5****Field:** NSB 05: Education, Training and Development**Sub field:** Adult Learning**Level:** 5**Credits:** 240**Issue date:****Review date:****Rationale for the qualification**

Many environmental education practitioners have no formal qualification in environmental education, yet they may be required to develop, implement and evaluate environmental learning programmes and resource materials for adults and children in a range of contexts. These may include environmental education programmes at natural or cultural heritage sites or in community settings, or environmental health and safety programmes in the workplace.

Whereas the National Certificates in EETDP at NQF levels 4 and 5 equip candidates to operate as *assistant* environmental education practitioners, the National Diploma at level 5 will prepare an environmental education practitioner to operate independently in a non-formal education context.

Having a diploma qualification and unit standards at this level will make the framework of environmental education qualifications more flexible and accessible and enable candidates to obtain recognition for their knowledge and experience in this sub-field. It will also enable organizations training and employing environmental educators to structure training programmes in accordance with nationally recognized standards.

Candidates who obtain the National Diploma in EETDP (NQF Level 5) will be able to register for an education qualification at level 6 on the NQF. The level 6 qualification will give them access to higher qualifications in the field of education, which in turn may open access to the Educators in Schooling sub-field.

Purpose of the qualification

The National Diploma in EETDP (Level 5) will prepare learners to function independently as entry-level environmental education practitioners. It will apply in particular to unqualified environmental education practitioners working in environmental education centres (e.g. volunteers, interns and part-time guides), and to people employed primarily in fields other than education, but who may develop an environmental education role in the workplace, e.g. field rangers, outreach officers, interpretative officers.

People accredited with this qualification will be able to design, plan, implement, evaluate and improve on a variety of environmental learning programmes. The candidate will be able to design new, original and innovative learning support materials to enrich the learning experience. People qualified at this level will make a meaningful contribution to environmental change through an educational response to environmental issues and risks in a range of contexts and workplaces. They may also be able to function as teachers' aides or environmental education specialists in formal education settings like schools.

Access to the qualification

Access to the National Diploma is open, but basic knowledge and experience of environmental education practice will be an advantage. Candidates should preferably already have unit standards, qualifications and/or experience in fields such as environment, conservation or development.

Although the National Certificate in EETPD (Level 5) is not a prerequisite for the National Diploma in EETPD (Level 5), Diploma candidates will be required to demonstrate competence in all core unit standards described in the Level 5 Certificate qualification. Thus, if the candidate has not previously obtained the National Certificate (Level 5), it is likely that the National Diploma (Level 5) will require the equivalent of two years rather than one year of full-time study in order to achieve the level 5 unit standards.

Learning Assumed to be in place

The learning assumed to be in place is an Further Education and Training Certificate (FETC) or RPL equivalent. Other learning assumed to be in place is detailed in specific unit standards. Different combinations of unit standards require different learning to be in place. For example, in the case of in-service training, the particular combination of unit standards will relate to the needs of the particular workplace, e.g. nature reserve, community-based development project or industrial plant.

Exit Level Outcomes

People with the **National Diploma in Environmental Education, Training and Development Practice (NQF Level 5)** will be competent in all the core unit standards from the **National Certificate in Environmental Education, Training and Development Practice (NQF Level 5)** in addition to the unit standards specific to the National Diploma. These two sets of unit standards are listed separately below:

Outcomes specific to the National Certificate in Environmental Education, Training and Development Practice (NQF Level 5):

- ◆ Demonstrate knowledge of environmental education goals, principles and methods and their appropriateness in different contexts
- ◆ Select, plan and adapt a contextually-relevant environmental learning

programme

- ◆ Implement and evaluate an environmental learning programme
- ◆ Select, adapt and use existing environmental resource materials and develop own supplementary learning aids
- ◆ Network broadly in order to source information and support around a key environmental issue or risk
- ◆ Research and analyze an environmental issue in the light of principles of environmental justice and sustainability and recommend possible solutions
- ◆ Apply appropriate social protocols in the workplace and community
- ◆ Apply fundamental knowledge of environmental ethics to a field of work or study
- ◆ Demonstrate a general understanding of people-environment relationships and current environmental challenges
- ◆ Review a variety of approaches to learning, teaching and evaluation
- ◆ Identify and support learners with special needs.

Outcomes specific to the National Diploma in Environmental Education, Training and Development Practice (NQF Level 5):

- ◆ Design, organize and critically evaluate an original environmental learning programme
- ◆ Critically evaluate a range of environmental learning programmes in different contexts
- ◆ Develop original learning support materials for an environmental learning programme
- ◆ Analyze a range of environmental issues and propose appropriate educational responses for different contexts
- ◆ Take action to address an environmental issue
- ◆ Manage a learning environmental appropriately for a learner group
- ◆ Develop learning programmes to enhance participation of learners with special needs
- ◆ Participate in and contribute to an environmental education network, committee or working group
- ◆ Demonstrate an understanding of the relevance of policies and conventions to environmental education
- ◆ Investigate options for improved environmental management and sustainable living

The unit standards making up this qualification reflect aspects of all the roles of the professional educator, as defined in the *Norms and Standards for Educators* (February 2000):

- ♦ Learning mediator
- ♦ Interpreter and designer of learning programmes and materials
- ♦ Leader, administrator and manager
- ♦ Scholar, researcher and lifelong learner
- ♦ Community, citizenship and pastoral role
- ♦ Assessor
- ♦ Learning area / subject / discipline / phase specialist

Furthermore, they also promote the development of the foundational, practical and reflexive components of 'applied competence' described in the same document.

Associated Assessment Criteria

The exit level outcomes are equivalent to the unit standards for this qualification. Assessment criteria are detailed in each of the unit standards and therefore the SGB did not produce additional assessment criteria for the exit level outcomes.

International Comparability

It appears that environmental education qualifications and unit standards are not included in international qualifications frameworks. Possible reasons for this include:

- ♦ Most of the international qualification frameworks are restricted to technical rather than academic qualifications; formal qualifications in environmental education are often educational specializations at postgraduate level
- ♦ Non-degree courses in environmental education are often short courses or workshops, which do not count towards formal qualifications.
- ♦ The field of environmental education is a relatively new field internationally. It has received much attention since the 1992 Rio Earth Summit in particular, when more than 100 governments made commitments to the implementation of Agenda 21. UNESCO has described South Africa as being on the 'cutting edge' of incorporating environmental education qualifications into national policy systems.

While environmental education qualifications *per se*, are not registered on other national qualifications frameworks, a number of diploma and degree programmes do exist internationally, covering in particular environmental education in teacher education. A survey of environmental education courses from the Asia-Pacific region, New Zealand and the United States of America indicated that the content of this level 5 qualification compares well with the knowledge, understanding, skills and value orientations covered in international courses.

Integrated Assessment

Assessment is not a single event but rather a structured process of gathering evidence and making judgements of learners' performance in relation to national standards. It is not within the scope of the SGB to prescribe forms of assessment or

assessment instruments. However, trainers, employers and assessors should bear in mind the principles of outcomes-based assessment when developing learning programmes and courses, and when monitoring and assessing learner competence. The Assessors SGB within the Education, Training and Development Field stresses that assessment should be appropriate, fair, manageable, integrated into work or learning, valid, direct, authentic, sufficient, systematic, open and consistent.

Assessment is concerned with the *quality* of the candidate's performance, the *quantity* of products produced and the candidate's *knowledge* and *understanding*. The assessment criteria in the unit standards provide adequate guidance for professional assessors to make informed judgements regarding learner performance. If assessment indicates that the candidate is not yet competent in a particular unit standard, s/he should be allowed further time and opportunities to develop the necessary competence.

In order to ensure that judgements are reliable, assessors should collect evidence from a variety of sources and in a number of ways, e.g. direct observation, role-plays and simulations, interviews, review of portfolios of work, testimonies from third parties, and formal written, oral or skills tests.

Where possible, assessment of performance should be carried out in *authentic* situations and in an *integrated* fashion, enabling the simultaneous assessment of multiple specific outcomes and assessment criteria. So, for example, by working with the candidate during the course of preparing and implementing an environmental learning programme, the supervisor will be able to assess not only his/her competence as an assistant EE practitioner, but also his/her organizational, administrative and teamwork abilities. Furthermore, by observing how the candidate participates in an environmental action project, the supervisor will be able to assess how well the candidate understands the particular issue and related environmental concepts and processes.

Recognition of Prior Learning

The assessment criteria in the unit standards are, for the most part, performance-based, rather than descriptions of required knowledge. This qualification could therefore be awarded as a result of RPL in the workplace.

Articulation possibilities

This qualification has been designed to articulate with the Level 5 National Certificate and with the Level 6 Bachelor's Degree in the sub-field Environmental Education, Training and Development Practice.

It has also been developed with reference to existing and draft qualifications and unit standards, in particular unit standards from ABET, Tourism and Conservation. It is likely that related fields and sub-fields will in turn be able to draw on unit standards from this level 5 qualification.

Moderation Options

Moderation must include both internal and external moderation of assessments at exit points of the qualification. Moderation should encompass achievement of the competence described in both individual unit standards as well as the integrated competence described in the qualification.

Criteria for the registration of assessors

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. Universities, colleges of education and organizations with well-established environmental education programmes should apply for accreditation in order to be able to carry out these functions. Co-operation between potential groups of assessors will be required in order to standardize assessment, moderation and the awarding of this qualification.

Qualification Matrix: NQF Level 5 (Diploma)

Level 5 <i>Fundamental</i>		Level 5 <i>Core</i>		Level 5 <i>Elective</i>	
<p>According to SAQA Regulations (March 1998), 'fundamental learning' means 'that learning which forms the grounding or basis needed to undertake the education, training or further learning required in the obtaining of a qualification.'</p> <p>Individual candidates, learning groups or training institutions may identify areas in which the candidate's fundamental education requires further development, and select appropriate unit standards from other qualifications to a maximum of 24 credits.</p> <p>Areas from which unit standards could be drawn include, but are not limited to:</p> <ul style="list-style-type: none"> ◆ Environmental studies ◆ Workplace communication ◆ Computer literacy ◆ Study skills ◆ Education theory 		<p>Organize oneself in the workplace-8616 3</p> <p>Fulfil administrative requirements of an environmental learning programme or action project (From NQF Level 4) 3</p> <p>Reflect on own facilitation performance as an environmental education practitioner (From NQF Level 4) 5</p> <p>Work ethically and professionally as an environmental education practitioner (From NQF Level 4) 3</p> <p>Identify and support learners with special needs (From NQF Level 4) 3</p> <p>All Level 5 Certificate unit standards 63</p> <p>Design, organize and critically evaluate an original environmental learning programme 8</p> <p>Critically evaluate a range of environmental learning programmes in different contexts 6</p> <p>Develop original learning support materials for an environmental learning programme 10</p> <p>Analyze a range of environmental issues and propose appropriate educational responses for different contexts 6</p> <p>Take action to address an environmental issue 12</p> <p>Manage a learning environment appropriately for a learner group 6</p> <p>Develop learning programmes to enhance participation of learners with special needs 6</p> <p>Participate in and contribute to an environmental education network, committee or working group 6</p> <p>Demonstrate an understanding of the relevance of policies and conventions to environmental education 4</p> <p>Investigate options for improved environmental management and sustainable living 16</p>		<p>The 16 credits completed in the level 5 Certificate form part of this qualification.</p> <p>National Diploma candidates complete a further 28 credits from this category. These can be selected from any field of learning relevant to the context and responsibilities of the environmental education officer</p> <p>These may include:</p> <ul style="list-style-type: none"> ▪ Conservation management 28 ▪ Natural and cultural resource management 28 ▪ Environmental studies 28 ▪ Information and communications technology 28 <p>Or</p> <p>A minimum of 28 credits from Education, Training and Development unit standards:</p> <p>Plan learning events- 9950 10</p> <p>Develop training materials-9954 12</p> <p>Facilitate learning using a variety of methodologies- 9957 18</p> <p>Evaluate learning programmes-9938 12</p>	
TOTAL	36		160		44

**UNIT STANDARDS IN NATIONAL DIPLOMA IN ENVIRONMENTAL EDUCATION,
TRAINING AND DEVELOPMENT PRACTICE****UNIT STANDARDS ON NQF LEVEL 2**

1. **Title:** Organize oneself in the workplace-8616

UNIT STANDARDS ON NQF LEVEL 4

1. **Title:** Fulfil administrative requirements of an environmental learning programme or action project
2. **Title:** Reflect on own facilitation performance as an environmental education practitioner
3. **Title:** Work ethically and professionally as an environmental education practitioner
4. **Title:** Identify and support learners with special needs

UNIT STANDARDS ON NQF LEVEL 5**All Level 5 Certificate unit standards - 63 credits**

1. **Title:** Plan learning events- 9950- 10 credits
2. **Title:** Develop training materials- 9954-12 credits
3. **Title:** Facilitate learning using a variety of methodologies- 9957-18 credits
4. **Title:** Evaluate learning programmes- 9938- 12 credits
5. **Title:** Design, organize and critically evaluate an original environmental learning programme
6. **Title:** Critically evaluate a range of environmental learning programmes in different contexts
7. **Title:** Develop original learning support materials for an environmental learning programme
8. **Title:** Analyze a range of environmental issues and propose appropriate educational responses for different contexts
9. **Title:** Take action to address an environmental issue
10. **Title:** Manage a learning environment appropriately for a learner group
11. **Title:** Develop learning programmes to enhance participation of learners with special needs
12. **Title:** Participate in and contribute to an environmental education network, committee or working group

- 13. Title:** Demonstrate an understanding of the relevance of policies and conventions to environmental education
- 14. Title:** Investigate options for improved environmental management and sustainable living

UNIT STANDARDS AND SPECIFIC OUTCOMES IN NATIONAL DIPLOMA IN ENVIRONMENTAL EDUCATION, TRAINING AND DEVELOPMENT PRACTICE**UNIT STANDARDS ON NQF LEVEL 4**

- 1. Title:** Fulfill administrative requirements of an environmental learning programme or action project

Specific Outcome 1.1: Reflect critically on implementation of an environmental learning programme or action project

Specific Outcome 1.2: Adapt activities based on evaluation

Specific Outcome 1.3: Identify self-development needs and take responsibility for fulfilling these

- 2. Title:** Reflect on own facilitation performance as an environmental education practitioner

Specific Outcome 1.1: Reflect critically on implementation of an environmental learning programme or action project

Specific Outcome 1.2: Adapt activities based on evaluation

Specific Outcome 1.3: Identify self-development needs and take responsibility for fulfilling these

- 3. Title:** Identify and support learners with special needs

Specific Outcome 1.1: Describe a range of special needs that may be encountered during an environmental learning programme or action project

Specific Outcome 1.2: Recognize and assist learners who have special needs during an environmental learning programme or action project

UNIT STANDARDS ON NQF LEVEL 5

- 1. Title:** Design, organize and critically evaluate an original environmental learning programme

Specific Outcome 1.1: Design an original environmental learning programme

Specific Outcome 1.2: Organize implementation of the environmental learning programme

Specific Outcome 1.3: Critically evaluate and improve the environmental learning programme

- 2. Title:** Critically evaluate a range of environmental learning programmes in different contexts

Specific Outcome 1.1: Describe the key features of a range of environmental

learning programmes

Specific Outcome 1.2: Critically evaluate a range of environmental learning Programmes

3. Title: Develop original learning support materials for an environmental learning programme

Specific Outcome 1.1: Identify a need for environmental learning support materials

Specific Outcome 1.2: Conduct research to determine form and content of materials required

Specific Outcome 1.3: Design and develop draft materials for the particular context

Specific Outcome 1.4: Pilot-test the materials and get feedback from stakeholders

Specific Outcome 1.5: Revise the materials based on feedback and field-testing

4. Title: Analyze a range of environmental issues and propose appropriate educational responses for different contexts

Specific Outcome 1.1: Analyze a range of environmental issues and risks

Specific Outcome 1.2: Suggest educational responses to these environmental issues or risks that are appropriate in different contexts

5. Title: Take action to address an environmental issue

Specific Outcome 1.1: Identify and assess an environmental issue

Specific Outcome 1.2: Develop an action plan

Specific Outcome 1.3: Implement the action plan

Specific Outcome 1.4: Report and reflect critically on the process of addressing an environmental issue

6. Title: Manage a learning environment appropriately for a learner group

Specific Outcome 1.1: Plan for learning interactions that respond to learner needs

Specific Outcome 1.2: Structure tasks and select learning support materials that will promote learning

Specific Outcome 1.3: Manage and reflect on learning interactions

Specific Outcome 1.4: Consider the role of language in learning

7. Title: Participate in and contribute to an environmental education network, committee or working group

Specific Outcome 1.1: Identify an opportunity to be involved in an environmental education network

Specific Outcome 1.2: Join and participate in an environmental education network

Specific Outcome 1.3: Reflect and report on the experience of participating in an environmental education network

8. Title: Demonstrate an understanding of the relevance of policies and conventions to environmental education

Specific Outcome 1.1: Demonstrate an understanding of the relevance of key environmental policies to environmental education

Specific Outcome 1.2: Demonstrate an understanding of the relevance of key national education policies and initiatives to environmental education

Specific Outcome 1.3: Evaluate an environmental project or learning programme in the light of these environmental and educational policies

9. Title: Investigate options for improved environmental management and sustainable living

Specific Outcome 1.1: Demonstrate an understanding of terms and concepts relating to environmental management and sustainable living

Specific Outcome 1.2: Present an in-depth analysis of a particular issue or challenge relating to environmental management or sustainable living

Specific Outcome 1.3: Describe options for better environmental management or sustainable living within a variety of geographical, social and economic contexts

10. Title: Develop learning programmes to enhance participation of learners with special needs

Specific Outcome 1.1: Demonstrate how learning programmes can enhance participation of learners with special needs

Specific Outcome 1.2: Respond appropriately to learners with special needs

No. 457

19 April 2002

**Bachelor of Environmental Education, Training and Development Practice-
NQF Level 6****Field:** NSB 05: Education, Training and Development**Sub field:** Adult Learning**Level:** 6**Credits:** 360**Issue date:****Review date****Rationale for the qualification**

Many environmental education practitioners have no formal qualification in environmental education, yet they may be required to develop, implement and evaluate environmental learning programmes and resource materials for adults and children in a range of contexts. These may include environmental education programmes at natural or cultural heritage sites or in community settings, or environmental health and safety programmes in the workplace.

The National Certificates in EETDP at NQF levels 4 and 5 equip candidates to operate as *assistant* environmental education practitioners, and the National Diploma at level 6 will prepare an environmental education practitioner to operate *fairly independently* in an education context. The B. Env.Ed. is designed to provide a vertical career advancement opportunities for those educators who have completed a 240 credit National Diploma in Environmental Education, Training and Development Practices, and is designed to enable candidates to *operate independently* as environmental educators. It also enables candidates to develop critical academic skills, and to apply these to their practice. The B.Env.Ed degree also enables candidates to operate in leadership positions, with some responsibility for management of programmes and projects within a given institutional context.

This unit standards-based qualification is worth 360 credits on the NQF. It will require the equivalent of one to three years full-time study to complete, depending on whether candidates have completed the level 5 National Diploma in EETD or not, and on their levels of experience.

Having a qualification and unit standards at this level will make the framework of environmental education qualifications more flexible and accessible and enable candidates to obtain recognition for their knowledge and experience in this sub-field. It will also enable organizations training and employing environmental educators to structure training programmes in accordance with nationally recognized standards. It also enables the development of a career pathway in environmental education, training and development.

Candidates who obtain the B.Env.Ed Degree in EETDP (NQF Level 6) will be able to register for further education qualifications at level 6 on the NQF, such as a Graduate Certificate in Education, or an Advanced Certificate in Environmental Education, Training and Development (a further 120 credits). This will provide access to level 7 qualifications. Should candidates with the B.Env.Ed degree complete a Graduate Certificate in Education, they should be eligible to teach in schools, and enter a career path in the formal education (educators for schooling) sub field.

Purpose of the qualification

The B. Env. Ed degree in EETDP (Level 6) will prepare learners to function independently as environmental education practitioners, and to take on some management responsibilities. It will apply in particular to environmental education practitioners working in environmental education centres, and to people employed primarily in fields other than formal education (schooling), but who may develop an environmental education role in the workplace, e.g. field rangers, outreach officers, community development practitioners, interpretative officers, industry trainers etc.

The B. Env. Ed degree in EETDP (Level 6) will enable environmental education practitioners to design, plan, implement, evaluate and improve on a variety of curricula, programmes, environmental learning programmes and learning support materials. When qualified, the candidate will be able to manage an environmental education project or programme, and improve their practice through policy development at a local and / or institutional level, and through networking. Candidates credited with this qualification will have the capacity to analyse different perspectives on learning and learning processes, and will be able to interpret and apply educational policies and management principles. They will not only be familiar with educational policy, but also with environmental policy and legislation, and with some of the more complex dimensions of socio-economic development issues and processes, particularly as these relate to better environmental management, and improvement of quality of life. They will have a strong sense of ethics, and will be able to apply crucial and systematic knowledge of environmental ethics to their work.

People qualified at this level will make a meaningful contribution to environmental change through an educational response to environmental issues and risks in a range of contexts and workplaces. These may include environmental education centres, cultural and natural heritage sites (e.g. nature reserves, protected areas, museums, botanical and zoological gardens), and community and industrial settings. They may also be able to function as assistant teachers or environmental education specialists in formal education settings like schools.

Access to the qualification

Access to the B.Env. Ed Degree is fairly open, and basic knowledge and experience of environmental education practice will be an advantage. Candidates will be required to demonstrate an FETC or RPL equivalent, preferably with unit standards, qualifications and/or experience in fields such as environment, conservation or development, or with qualifications and experience in one or more of the following

human and social sciences, natural sciences, or environmental sciences at levels 2-4 on the NQF.

Although the National Diploma in EETPD (Level 5) is not a *prerequisite* for the B.Env. Ed (Level 6), degree candidates will be required to demonstrate competence in the unit standards described in the level 5 National Diploma in EETDP qualification. Thus, if the candidate has not previously obtained the National Diploma (Level 5), it is likely that the B.Env. Ed (Level 6) will require the equivalent of *three* years rather than one year of full-time study in order to achieve the level 5 unit standards.

Learning Assumed to be in place

The learning assumed to be in place is an FETC or RPL equivalent. In addition to the necessary communications and mathematical literacy required at this level, foundational knowledge in educational theory and practice (understanding learning) and educational policy and management is strongly recommended.

Other learning assumed to be in place is detailed in specific unit standards. Different combinations of unit standards require different learning to be in place. For example, in the case of in-service training, the particular combination of unit standards will relate to the needs of the particular workplace, e.g. nature reserve, community-based development project or industrial plant.

Exit Level Outcomes

People with the **Bachelor of Environmental Education, Training and Development Practice (NQF Level 6)** will be competent in all the core unit standards required for the **National Diploma in Environmental Education, Training and Development Practice (NQF Level 5)** in addition to the unit standards specific to the B.Env. Ed. These sets of unit standards are listed separately below:

Outcomes specific to the National Certificate in Environmental Education, Training and Development Practice (NQF Level 5) (required in the National Diploma in EETD):

- ◆ Demonstrate knowledge of environmental education principles, processes and methods and their appropriateness in different contexts
- ◆ Select, plan and adapt a contextually relevant environmental learning programme
- ◆ Implement and evaluate an environmental learning programme
- ◆ Select, adapt and use existing environmental learning support materials and develop their own supplementary learning aids
- ◆ Network broadly in order to find information and support around a key environmental issue or risk
- ◆ Research and analyze an environmental issue in terms of principles of environmental justice and sustainability, and recommend possible solutions
- ◆ Fulfill administrative requirements of an environmental learning programme or action project
- ◆ Reflect on own facilitation performance as EE practitioner
- ◆ Apply fundamental knowledge of environmental ethics to a field of work or study
- ◆ Organize oneself in the workplace

- ◆ Apply appropriate social protocols in the workplace and community
- ◆ Demonstrate knowledge of environmental ethics and how they influence personal and social values and lifestyle choices
- ◆ Demonstrate a general understanding of people-environment relationships and current environmental challenges
- ◆ Review a variety of approaches to learning, teaching and evaluation.
- ◆ Identify and support learners with special educational needs.

Outcomes specific to the National Diploma in Environmental Education, Training and Development Practice (NQF Level 6):

- ◆ Design, organize, critically evaluate an original environmental learning programme
- ◆ Critically evaluate a range of environmental learning programmes in different contexts
- ◆ Develop original learning support materials for an environmental learning programme
- ◆ Analyze a range of environmental issues and propose appropriate educational responses for different contexts
- ◆ Take action to address an environmental issue
- ◆ Manage a learning environment appropriately for a learner group
- ◆ Develop learning programmes to enhance participation of learners with special needs
- ◆ Participate in and contribute to an environmental education network, committee or working group
- ◆ Demonstrate an understanding of the relevance of policies and conventions to environmental education
- ◆ Investigate options for improved environmental management and sustainable living

Outcomes specific to the B.Env Ed Degree (level 6)

- ◆ Analyze different perspectives on learning and learning processes
- ◆ Interpret education policy, and apply policy and management principles to own practice
- ◆ Design and review environmental education curricula and programmes
- ◆ Evaluate a variety of environmental education learning support materials
- ◆ Manage and evaluate an environmental education project or programme
- ◆ Improve environmental education through policy development and networking
- ◆ Demonstrate knowledge of the history, key features and current debates in

environmental education

- ◆ Apply critical and systematic knowledge of environmental ethics to a field of work or study
- ◆ Review aspects of environmental legislation in a South African context
- ◆ Critically review socio-economic development issues and processes
- ◆ Plan and conduct assessment of learning outcomes

The unit standards making up this qualification reflect aspects of all the roles of the professional educator, as defined in the *Norms and Standards for Educators* (February 2000):

- ◆ Learning mediator
- ◆ Interpreter and designer of learning programmes and materials
- ◆ Leader, administrator and manager
- ◆ Scholar, researcher and lifelong learner
- ◆ Community, citizenship and pastoral role
- ◆ Assessor
- ◆ Learning area / subject / discipline / phase specialist

Furthermore, they also promote the development of the foundational, practical and reflexive components of 'applied competence' described in the same document.

Associated Assessment Criteria

The exit level outcomes and the unit standards for this qualification are directly related. Assessment criteria are detailed in each of the unit standards. Therefore the SGB did not produce additional assessment criteria for the exit level outcomes. They are adequately dealt with in each unit standard.

International Comparability

It appears that environmental education qualifications and unit standards are not included in international qualifications frameworks. Possible reasons for this include:

- ◆ Most of the international qualification frameworks are restricted to technical rather than academic qualifications; formal qualifications in environmental education are often educational specializations at postgraduate level
- ◆ Non-degree courses in environmental education are often short courses or workshops, which do not count towards formal qualifications.
- ◆ The field of environmental education is a relatively new field internationally. It has received much attention since the 1992 Rio Earth Summit in particular, when more than 100 governments made commitments to the implementation of Agenda 21. UNESCO has described South Africa as being on the 'cutting edge' of incorporating environmental education qualifications into national policy systems.

While environmental education qualifications *per se*, are not registered on other national qualifications frameworks, a number of diploma and degree programmes do exist internationally, covering in particular environmental education in teacher

education. A survey of environmental education courses from the Asia-Pacific region, New Zealand and the United States of America indicated that the content of this level 6 qualification compares well with the knowledge, understanding, skills and value orientations covered in international courses. This qualification has also been compared with educational programmes offered by UNESCO at an international level, and it compares favourably with these programmes (used at levels 6 and 7).

Integrated Assessment

Assessment is not a single event but rather a structured process of gathering evidence and making judgements of learners' performance in relation to national standards. It is not within the scope of the SGB to prescribe forms of assessment or assessment instruments. However, trainers, employers and assessors should bear in mind the principles of outcomes-based assessment when developing learning programmes and courses, and when monitoring and assessing learner competence. The Assessors SGB within the Education, Training and Development Field stresses that assessment should be appropriate, fair, manageable, integrated into work or learning, valid, direct, authentic, sufficient, systematic, open and consistent.

Assessment is concerned with the quality of the candidate's performance, the quantity of products produced and the candidate's knowledge and understanding. The assessment criteria in the unit standards provide adequate guidance for professional assessors to make informed judgements regarding learner performance. If assessment indicates that the candidate is not yet competent in a particular unit standard, s/he should be allowed further time and opportunities to develop the necessary competence.

In order to ensure that judgements are reliable, assessors should collect evidence from a variety of sources and in a number of ways, e.g. direct observation, roleplays and simulations, interviews, review of portfolios of work, testimonies from third parties, and formal written, oral or skills tests. Where possible, assessment of performance should be carried out in authentic situations and in an integrated fashion, enabling the simultaneous assessment of multiple specific outcomes and assessment criteria. So, for example, by observing the candidate during the course of preparing and implementing an environmental learning programme, the assessor will be able to assess not only his/her competence as an environmental education practitioner, but also his/her organizational, administrative and teamwork abilities. Furthermore, by observing how the candidate undertakes an environmental action project, the assessor will be able to gauge how well the candidate understands the particular issue and related environmental concepts and processes.

Recognition of Prior Learning

The assessment criteria in the unit standards are, for the most part, performance-based, rather than descriptions of required knowledge. This qualification could therefore be awarded as a result of RPL in the workplace.

Articulation possibilities

This qualification has been designed to articulate with the level 5 National Certificate and with the level 5 National Diploma in Environmental Education, Training and Development Practices. It articulates with the General Certificate in Education (for educators in schooling) allowing vertical articulation. Similarly, it articulates with the Advanced Certificate for Environmental Education, Training and Development Practices.

It has also been developed with reference to existing and draft qualifications and unit standards, in particular unit standards from assessors, ABET, Tourism and

Conservation. It is likely that related fields and sub-fields will in turn be able to draw on unit standards from this level 6 qualification.

Moderation Options

Moderation must include both internal and external moderation of assessments at exit points of the qualification. Moderation should encompass achievement of the competence described in both individual unit standards as well as the integrated competence described in the qualification.

Criteria for the registration of assessors

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. Universities, colleges of education and organizations with well-established environmental education programmes should apply for accreditation in order to be able to carry out these functions. Co-operation between potential groups of assessors will be required in order to standardize assessment, moderation and the awarding of this qualification.

Qualification Matrix: NQF Level 6

Level 5 <i>Fundamental</i>		Level 5 <i>Core</i>		Level 5 <i>Elective</i>	
Analyse different perspectives on learning and learning processes	14	160 Credits from core unit standards from level 5 National Diploma in Environmental Education, Training and Development Practice	160	60 Credits from an area of specialism in the social sciences, natural sciences or environmental sciences (at levels 5 and 6) to facilitate the development of foundational competence in the chosen area.	60
Interpret education policy, and apply policy and management principles to own practice	12	Plan and conduct assessment of learning outcomes-7978	15		
Individual candidates, learning groups or training institutions may identify areas in which the candidate's fundamental education requires further development, and select appropriate unit standards from other qualifications to a maximum of 10 credits.	10	Design and review environmental education curricula and programmes	8	30 Credits from an area of study relevant to environmental education, training and development practices relating to the specific context in which the learner works, for example conservation, natural resource management, industrial environment management, ABET Practice and environmental education centres.	30
Areas from which additional unit standards could be drawn include:		Evaluate a variety of environmental education learning support materials	6		
♦ Environmental studies		Manage and evaluate an environmental education project or programme	8		
♦ Education theory		Improve environmental education through policy development and networking	5		
♦ Workplace management		Demonstrate knowledge of the history, key features and current debates in environmental education	6		
♦ Computer literacy		Apply critical and systematic knowledge of environmental ethics to a field of study	8		
♦ Study skills		Review aspects of environmental legislation in a South African context	4		
		Critically review socio-economic development issues and processes	14		
TOTAL	36		234		90

**UNIT STANDARDS IN BACHELORS DEGREE IN ENVIRONMENTAL EDUCATION,
TRAINING AND DEVELOPMENT PRACTICE****UNIT STANDARDS ON NQF LEVEL 5**

160 Credits from core unit standards from level 5 National Diploma in Environmental Education, Training and Development Practice

1. **Title:** Plan and conduct assessment of learning outcomes- 7978

UNIT STANDARDS ON NQF LEVEL 6

1. **Title:** Analyse different perspectives on learning and learning processes
2. **Title:** Interpret education policy, and apply policy and management principles to own practice
3. **Title:** Design and review environmental education curricula and programmes
4. **Title:** Evaluate a variety of environmental education learning support materials
5. **Title:** Manage and evaluate an environmental education project or programme
6. **Title:** Improve environmental education through policy development and networking
7. **Title:** Demonstrate knowledge of the history, key features and current debates in environmental education
8. **Title:** Apply critical and systematic knowledge of environmental ethics to a field of study
9. **Title:** Review aspects of environmental legislation in a South African context
10. **Title:** Critically review socio-economic development issues and processes

UNIT STANDARDS AND SPECIFIC OUTCOMES ON NQF LEVEL 6

1. **Title:** Analyze different perspectives on learning and learning processes

Specific Outcome 1.1: Show understanding of different theoretical and practical explanations of how learning takes place

Specific Outcome 1.2: Understand and examine processes that promote learning

Specific Outcome 1.3: Analyze learning assumptions that underpin teaching strategies, OBE policy, curricula and the use of learning support materials

2. **Title:** Interpret education policy, and apply policy and management principles to own practice

Specific Outcome 1.1: Review key shifts in South African education policy development and recognize implications for management

practice

Specific Outcome 1.2: Explain how current policy is influenced by South Africa's educational history

Specific Outcome 1.3: Identify and describe key trends and debates in South African education management and consider their relevance and applicability to own practice

Specific Outcome 1.4: Critically analyze organization life (organization literacy), and engage in processes that lead to change, self-improvement, renewal and capacity building

3. Title: Design and review environmental education curricula and programmes

Specific Outcome 1.1: Select appropriate approaches to guide curriculum and programme development

Specific Outcome 1.2: Design relevant curricula or programme, using a particular approach or model

Specific Outcome 1.3: Implement an aspect of the curriculum or programme

Specific Outcome 1.4: Critically review the implementation process, and the curriculum design process

4. Title: Evaluate a variety of environmental education learning support materials

Specific Outcome 1.1: Evaluate learning support materials using appropriate Criteria

Specific Outcome 1.2: Evaluate the use of a range of learning support materials in practice

5. Title: Manage and evaluate an environmental education project or programme

Specific Outcome 1.1: Manage a small scale environmental education project or Programme

Specific Outcome 1.2: Evaluate a small scale project or programme

6. Title: Improve environmental education through policy development and networking

Specific Outcome 1.1: Identify relevant environmental education networks

Specific Outcome 1.2: Make contributions to the environmental education Network

Specific Outcome 1.3: Draw on experiences gained in the network to improve own environmental education practice.

Specific Outcome 1.4: Plan and conduct an environmental audit to assess local or institutional environmental policy requirements

Specific Outcome 1.5: Develop environmental policy statements and action plans

Specific Outcome 1.6: Critically reflect on the process of environmental policy development in the light of own practice

7. Title: Demonstrate knowledge of the history, key features and current debates in environmental education

Specific Outcome 1.1: Review key global events and their influence on environmental education practice

Specific Outcome 1.2: Explain how current environmental education practice is influenced by the history of environmental education in the South African context

Specific Outcome 1.3: Critically evaluate key trends and debates in environmental education in relation to own practice

8. Title: Apply critical and systematic knowledge of environmental ethics to a field of work or study

Specific Outcome 1.1: Demonstrate critical and systematic knowledge and understanding of the field of environmental ethics.

Specific Outcome 1.2: Formulate ethically responsible and reasoned responses to a wide range of environmental issues

Specific Outcome 1.3: Demonstrate how environmental ethics can inform and transform organizational practices affecting the

environment

Specific Outcome 1.4: Demonstrate a critical understanding of the relationship between environmental ethics and a wide range of policies affecting the environment

Specific Outcome 1.5: Conduct basic guided research, exploring the environmental value dimensions of an environmental issue

9. Title: Review aspects of environmental legislation in a South African context

Specific Outcome 1.1: Describe international protocols and their relevance and appropriateness to South Africa

Specific Outcome 1.2: Critically evaluate South African environmental legislation and comment on its implementation

10. Title: Critically review socio-economic development issues and processes

Specific Outcome 1.1: Describe the history of global economic interventions and identify key role players

Specific Outcome 1.2: Assess the effectiveness and describe the impacts of various development interventions

Specific Outcome 1.3: Critically evaluate a local development intervention

No. 458

19 April 2002

**Advanced Certificate in Environmental Education, Training and Development
Practice- NQF Level 6****Field:** NSB 05: Education, Training and Development**Sub field:** Adult Learning**Level:** 6**Credits:** 120 Credits**Issue date:****Review date:****Rationale for the qualification**

The AC EETDP is a flexible Level 6 qualification aimed at providing environmental practitioners, and environmental education, training and development practitioners with an opportunity of enriching and supplementing their existing knowledge in environmental education, or of specialising in environmental education, training and development practices at level 6. This qualification responds to the need to enable career paths for environmental educators. It also enables learners with an existing level 6 qualifications to access the field of environmental education as a specialist career option. It responds to environment and development issues through education in a range of different contexts such as conservation, industry, community development, rural development, government and so forth.

Access to the AC EETD is open to candidates who are already in possession of an approved Level 6 qualification in the field of education, training and development practices, an environmentally related field or any other field in which environmental education may be practiced. It creates opportunities for further study at Level 7.

Purpose of the qualification

The primary purpose of the AC EETD is to provide for specializing in the field of environmental education, training and development practices. The qualification provides learners from a range of different fields and contexts access to post graduate learning in Education, Training and Development Practices, and enables a career path in environmental education, training and development practices. This may include learners from the fields of conservation, tourism, agricultural extension,

industry, community development, museum education, social ecologists and environmental education.

However, it also provides the space for programmes which enable educators to **update, enrich and/or supplement** their existing knowledge and competence in an area of study which, although previously studied at a more basic level, does not yet qualify educators to continue that specialism in a qualification at NQF Level 7. In such cases the purpose of the AC EETD will be to update the knowledge of educators, perhaps in terms of new developments in the area of environmental education, training and development, and/or to enrich, deepen and extend the knowledge of educators in this area.

In both these kinds of cases, the AC EETD is conceived of as a form of continuing professional education which has the purpose of enabling environmentalists and educators and development practitioners to improve their competences and/or to change their career path and adopt new educator roles.

Access to the qualification

Access to the AC EETD requires a prior level 6 qualification in the field of education, training and development practices, an environmentally oriented field or any other related field.

Learning Assumed to be in place

This qualification assumes that the learner is competent in the language of instruction of the provider, and the general theoretical, academic and practical professional knowledge, understanding and commitments accomplished in a 360 credit qualification at Level 6.

Exit Level Outcomes

In their area of special study, candidates must demonstrate:

Competencies relating to teaching and learning processes

8.1 Practical competence in selecting, designing, planning, implementing and evaluating, appropriate, and effective environmental education projects, procedures and/or programmes; with consideration of:

- contemporary trends in education theory
- contemporary trends in curriculum theory
- contemporary trends influencing programme development and evaluation

8.2 A capacity to critically analyze and design relevant materials, resources, practices, and learning programmes, in the light of a conceptual understanding of the field of environmental education, training and development practices.

Competencies related to the subject or area of specialism

8.3 The ability to justify particular choices and actions in an area of environmental education, training and development practice in the light of:

- a critical understanding of the theoretical underpinnings of environmental education, training and development practices;
- a critical understanding of the nature, causes and impacts of environmental issues and risks in diverse contexts, and the role of education in responding to these issues and risks in different settings
- an understanding of current social, economic, political, technological

and environmental factors influencing environmental education practice in different contexts, including local, national and global perspectives.

- relevant features of the context, including the history, organizational environment, the resources available, objectives of organizational programmes, and the purposes of the tasks at hand; and
- contemporary trends in environmental ethics, environmental studies, environmental policy making, environmental management and education, training and development practice.

Competencies relating to the environmental and educator professions

8.4 Appropriate and adaptable professional skills and judgement, in a variety of contexts of practice;

8.5 A commitment to:

- set, and aspire to achieve, high standards in practice, and
- ongoing professional improvement;
- environmental ethics in the context of their practice;
- contributing to a professional community through networking and interactions with relevant professional organizations and publications

Associated Assessment Criteria

The assessment criteria and evidence requirements are as follows:

In a practical situation, a simulated situation, or a situation that combines the practical, the simulated and the written, in the area of environmental education, training and development practices (in a particular organisational context and/or environment), the learner will:

- Generate, explore and consider options for appropriate educative action in a given environment or context;
- Identify the most appropriate course of educative action in relation to the particular environment or context and identify available resources;
- Explain the reasons for that particular selection, by drawing appropriate theories and by considering contextual factors, and explain what was taken into account in making the selection;
- Perform the identified educative action, while continuously monitoring and adapting performance as required;
- Explain the reasons for the performance;
- Evaluate his/her performance and identify areas for improvement;
- Reflect on the performance;
- Develop a plan or strategy for future educative actions which reflect an integration of what has been learnt through reflection.

International Comparability

The SGB has consulted base line reports on teacher education qualifications from the UNESCO Environmental Education Teacher Education Network.

The need for such a course in the SADC region has been reported in a Masters research study by Field (University of Natal). The SGB consulted with the SADC Regional Environmental Education Programme, who currently run a two month international certificate in environmental education (currently a 36 credit course) for mid-career professionals from diverse contexts. The outcomes and curriculum framework of this SADC course were used to inform the development of this qualification.

The qualification is similar to the ACE designed by the Educators in Schooling SGB,

which has drawn on the *Norms and Standards for Educators in Schooling* in South Africa. When designing the ACE, the Educators in Schooling SGB consulted the *Guidelines for Initial Teacher Education Courses in Scotland* from the Scottish Office Education and Industry Department (October 1998), and *Competency Based and Commitment Oriented Teacher Education for Quality School Education* from the National Council for Teacher Education (New Delhi -1998).

Integrated Assessment

In the assessment strategy as a whole, evidence must be demonstrated through a variety of strategies: case studies, problem-solving assignments, practice in simulated and *in situ* contexts, portfolios of resources and materials, projects, written and oral examinations.

However, the final integrated assessment needs to have the following characteristics:

- It should measure *applied competence*. In other words, it should assess whether learners are able competently to engage in appropriate environmental education and training practices (a practical competence), to understand the theoretical bases for these practices (foundational competence), and reflect on and improve their engagement in such practices (reflexive competence).
- It should measure the extent to which learners have integrated the roles and the knowledge and skills delivered through the different courses/modules which make up the programme.
- It should be designed in such a way that a variety of roles are assessed in practice in the area of environmental education, training and development practices.
- It should assess the extent to which learners can work competently, flexibly, responsively and effectively in the area of environmental education, training and development practices, in appropriate organizational contexts.

Recognition of Prior Learning

This qualification may be achieved in part through the recognition of relevant prior learning and experience in the area of environmental education, training and development practices, or a related environmentally oriented field (e.g. conservation; environmental science, environmental management, waste management, social ecology), particularly in cases where the learner has been involved in environmental education practice. Relevant prior experience as a practitioner in one of the sub-fields of Education, Training and Development may also be considered in the recognition of relevant prior learning and experience. Providers are required to develop structured procedures for the assessment of individual learners against the exit level outcomes of the qualification on a case by case basis. Such procedures, and the assessment of individual cases, are subject to moderation by independent assessors.

Articulation possibilities

Although the access requirement for the AC EETDP may already formally qualify a learner to proceed with a qualification at Level 7, the AC EETDP can also serve as an additional qualification for further study in a particular specialist area of study at Level 7.

Moderation Options

Candidates' results/performance should be moderated by one or more external moderators. Moderators should report not only on the standard of candidates' achievement but also on the reliability, validity and transparency of the assessment criteria, design and procedures in relation to the purpose and exit level outcomes of the qualification.

Providers may use their own qualified staff as assessors. They may also utilize the services of tutors, departmental advisory service staff, fully qualified educators acting as mentors and outside assessment agencies.

Suggested credit weighting for the AC EETD:

<p>Fundamental: <u>Competencies related to fundamental learning</u> Communication Numeracy, Science and technology Natural or Social Sciences</p>		<p>Covered in previous level 6 qualifications</p>
<p>Core: <u>Competencies related to the subject / area of specialism</u> Environmental Studies, Environmental Management and Environmental Ethics</p>		<p>20</p>
<p>Competencies related to teaching and learning processes</p>		<p>24</p>
<p>Environmental Education Methods</p>		<p>24</p>
<p>Environmental Education Practice and Research</p>		<p>24</p>
<p>Environmental Learning and Theories of Education</p>		<p>20</p>
<p>Curriculum and Programme development and evaluation</p>		
<p>** All core credits are compulsory</p>		
<p>Electives: <u>Competencies related to the educator & environmental professions</u> Professional Ethics Environmental and Education Policy & Networking Evaluation Theory Research Methods</p>		<p>4 4 4 4</p>
<p>*** Select 8 elective credits</p>		

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UNIT STANDARDS IN ENVIRONMENTAL EDUCATION, TRAINING AND DEVELOPMENT PRACTICE ON NQF LEVEL 7

- 1. Title:** Apply policy guidelines critically to the development of environmental education curricula and programmes
- 2. Title:** Apply learning theory critically to the mediation of environmental learning
- 3. Title:** Critically analyze environmental education trends for relevance to own practice

UNIT STANDARDS AND SPECIFIC OUTCOMES IN ENVIRONMENTAL EDUCATION, TRAINING AND DEVELOPMENT PRACTICE ON NQF LEVEL 7

- 1. Title:** Apply policy guidelines critically to the development of environmental education curricula and programmes

Specific Outcome 1.1: Interpret and apply relevant educational, environmental and environmental education policy to curriculum and programme development

Specific Outcome 1.2: Evaluate curriculum and programmes in the light of relevant environmental and environmental education policy requirements

- 2. Title:** Apply learning theory critically to the mediation of environmental learning

Specific Outcome 1.1: Select and apply relevant methods and assessment processes in the mediation of environmental learning

Specific Outcome 1.2: Assess the appropriateness of different methods and assessment strategies for environmental learning

- 3. Title:** Critically analyze environmental education trends for relevance to own practice

Specific Outcome 1.1: Identify and analyse features of environmental issues and

Risks

Specific Outcome 1.2: Assess the relevance of environmental and environmental education perspectives for own practice

No. 460

19 April 2002

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

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

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification and unit standard upon which qualifications are based. The full qualification and unit standards can be accessed via the SAQA web-site at www.saga.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, 659 Pienaar street, Brooklyn, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 14 May 2002***. All correspondence should be marked **Standards Setting – SGB for Manufacturing and Assembly** 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 – 482 0907



TP SAMUEL B.A. ISAACS
EXECUTIVE OFFICER

National Certificate in Metal and Engineering Manufacturing: NQF Level 2

Field: Manufacturing, engineering and technology- NSB 06

Sub-field: Manufacturing & assembly

Level: 2

Credit: 130

Issue date:

Review date:

Rationale of the qualification

Why should I become qualified? How will a qualification help me?

The metal and engineering industry is characterised by diverse manufacturing processes operating in a competitive and challenging environment.

The manufactured products have to respond to a wide variety of exacting customer and consumer requirements.

This first qualification forms a basis for learners who want to follow a career in the metal engineering industry. This qualification reflects the skills, knowledge and understanding required to participate effectively in the metal engineering industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training.

For the new entrant, this qualification recognises the applied competence needed by a productive person in a structured workplace.

The qualification also forms the basis for further development.

Purpose:

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to achieve competence in the operation of machines in the metal and engineering industry

This qualification recognises the skills, knowledge and values acquired by learners involved in operating and monitoring manufacturing machinery and assembling components and working in the metal and engineering industry using such processes.

The main skills that are recognised in this qualification are operating and monitoring machines and recognising and responding to changes in the manufacturing of components. This capability requires an understanding of basic quality requirements and monitoring material flow. Hand skills play a role in this qualification.

Qualified learners will also understand:

- the basics of how a business functions
- their role in the business, i.e. in production and related activities
- how they are affected by legislation, regulations, agreements and policies related to their particular work environment.

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to basic scientific and technological principles and concepts.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes.

Access to qualification

Open access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place

My previous learning

This qualification assumes learners have a General Education and Training Certificate at NQF level 1, or alternatively, ABET qualifications.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Literacy and numeracy
- Basic concepts of science and technology

Exit level outcomes and Assessment Criteria

On what performance will I be assessed?

Exit level outcome 1

Contribute to the main manufacturing process

Associated Assessment Criteria

- Machinery operated correctly
- Components assembled to specifications
- Basic safety, health and environmental protection procedures adhered to.
- Quality standards met
- Process and product monitored

Exit level outcome 2

Apply quality assurance procedures

Associated Assessment Criteria

- Basic measuring instruments, e.g. go/no go gauges used.
- Basic checking and sampling activities undertaken according to specifications
- Defects recognised and responded to accordingly

Exit level outcome 3

Gather and communicate information

Associated Assessment Criteria

- Production outputs reported
- Downtime recorded and reported
- Information is gathered from various sources and used in relevant situations

Exit level outcome 4

Understand role in work situation

Associated Assessment Criteria

- Job requirements are explained
- Own function in terms of the production chain is explained
- Role in work team is understood and explained

Exit level outcome 5

Communicate with peers and members of supervisory/management levels by demonstrating the ability to summarise information and express opinions on given information in spoken or written form

Associated Assessment Criteria

- Communication is regular and ongoing
- Information is clear and accurate and conveyed in a timely manner
- Relationships with peers and supervisory/management levels are established and functioning

Exit level outcome 6

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment**How will I be assessed?**

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he 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 introduced if pertinent to any of the exit-level outcomes.

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

The qualification and the standards have been written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do.

Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should I not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit my needs.

Criteria for the registration of assessors

How will I know that the assessor will not prejudge or prejudice me?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in metal engineering manufacturing.

To assure the quality of the assessment process the moderation should cover one of more of the following:

1. assessor credentials
2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing – with a minimum of 1 year in a metal engineering manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 2

Level 2 Fundamental		Level 2 Core		Level 2 Elective choice of	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Operate and monitor machinery	12	Assemble components	12
Choice of workplace communication unit standards reflecting the following outcomes	5	Complete post production and finishing operations	12	Perform basic winding/rewinding of electro-mechanical components	19
Maths	16	Use and care for tools and equipment	10	Prepare metal surfaces	6
SAQA registered maths standards at this level		Mark off basic regular engineering shapes	6	Perform basic welding/joining of metals	8
The outcomes should, however, reflect the following outcomes		Read and interpret basic engineering drawings	8	Safety, Health & Environmental Quality Assurance	
Working with information		Safety, Health & Environmental Quality Assurance		Basic first aid	4
Using information and technology, reflecting the following outcomes	5	Maintain a safe and productive work area, reflecting the following outcomes	8	Basic fire fighting	4
Life Skills		People: interacting, leading, developing		Dealing with safety, health and environmental emergencies in the workplace	4
Manage personal finance	4	Working in groups, reflecting the following outcomes	4	Business Relations	
Understanding and dealing with HIV / Aids personally and in the workplace	3	Business Relations		Frame and implement an individual action plan to improve productivity within an organisational unit	3
Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6	Explain my role within business, my rights, contributions and responsibilities, reflecting the following outcomes	4		
				Other standards or additional learning related to the purpose of the qualification	

Total Fundamental	238	Total Core	64	Minimum elective credits required for qualification	12
Total for qualification	130				

No. 461

19 April 2002

National Certificate in Metal and Engineering Manufacturing Processes: NQF Level 3**Field:** Manufacturing, engineering and technology- NSB 06**Sub-field:** Manufacturing & assembly**Level:** 3**Credit:** 142**Issue date:****Review date:****Rationale for the qualification**

Why should I become qualified? How will a qualification help me?

The metal and engineering industry is characterised by diverse manufacturing processes operating in a competitive and challenging environment.

The manufactured products have to respond to a wide variety of exacting customer and consumer requirements.

This higher level qualification enables learners to further their careers in metal and engineering manufacturing processes including the assembly of products

This qualification reflects the skills, knowledge and understanding required to participate effectively in the metal and engineering industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training.

The qualification also forms the basis for further development.

Purpose:

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to achieve competence in manufacturing and assembly processes.

This qualification recognises the skills, knowledge and values acquired by learners involved in manufacturing and/or assembly of products in the metal and engineering industry

The main skills that are recognised in this qualification are

- Adjusting and maintaining the production process
- Handling and caring for materials
- Performing first line maintenance
- Assembling and/or dismantling components/assemblies

Qualified learners will also understand:

- Manufacturing processes
- Maintaining the process
- Company procedures
- Basic maintenance
- Basic quality control
- SHE requirements

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts. They will also be able to maintain and support the various policies and procedures related to the safety, health, environment and quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes.

Access to qualification

Open access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place

My previous learning

This qualification assumes learners have a national certificate in metal and engineering manufacturing level 2.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and maths beyond basic literacy and numeracy
- Concepts of science and technology related to material, machinery and equipment in use in the engineering manufacturing process
- Concepts of organising factors in labour, business and the economy
- Role and purpose of procedures related to workplace relationships, roles and responsibilities

Exit level outcomes and Assessment Criteria

On what performance will I be assessed?

Exit level outcome 1

Demonstrate an understanding of how to adjust and maintain a metal and engineering manufacturing and assembly process to ensure process remains within defined safety and quality parameters.

Associated Assessment Criteria

- Identify and use materials, tools and equipment
- Produce product according to company procedures
- Adhere to required specifications and standards
- Adjust and maintain the production process as required
- Materials handled and cared for
- Work undertaken in a safe and environmentally aware manner

Exit level outcome 2

Perform first line maintenance

Associated Assessment Criteria

- Comply with company maintenance procedure
- Select and use correct tools and equipment
- Identify and report defects on machinery and equipment

Exit level outcome 3

Apply quality control procedures

Associated Assessment Criteria

- Ensure product/component complies with specifications
- Report and record non-compliances
- Select and use appropriate measuring instruments

Exit level outcome 4

Apply safety, health and environmental protection procedures

Associated Assessment Criteria

- Comply with procedures to avoid damage and incidents
- Identify and report unsafe conditions (including potential health and environmental hazards)
- Select and use appropriate personal protective equipment

Exit level outcome 5

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment**How will I be assessed?**

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he 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 introduced if pertinent to any of the exit-level outcomes.

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

The qualification and the standards have been written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do.

Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should I not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit my needs.

Criteria for the registration of assessors

How will I know that the assessor will not prejudge or prejudice me?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in metal engineering manufacturing.

To assure the quality of the assessment process the moderation should cover one of more of the following:

1. assessor credentials

2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing – with a minimum of 1 year in a metal and engineering manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 3

Level 3 Fundamental		Level 3 Core		Level 3 Elective Choice of:	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Adjust and maintain the production process	30	Assemble complex components	25
Choice of workplace communication unit standards reflecting the following outcomes	5	Perform first line maintenance	14	Dismantle complex assemblies	20
Maths	16	Read and interpret engineering drawings	12	Perform winding/rewinding of complex electro-mechanical components	40
SAQA registered maths standards at this level		Materials		Coat material and components	4
The outcomes should, however, reflect the following outcomes		Handle and care for materials	12	Select, use and care for marking off/out equipment: routine shapes	8
Working with information		People: interacting, leading, developing		Operate a lift truck	6
Analyse information, reflecting the following outcomes	5	Contribute to work group performance	3	Operate a crane	10
Keyboard skills to capture and record information	3	Develop learning strategies and techniques, reflecting the following outcomes	3	Safety, Health & Environmental Quality Assurance	
Life skills		Business Relations		Perform role of safety representative	4
Discuss and explain personal financial concepts (pay deductions, bank accounts, interest, insurance)	4	Relate own role to role of business, customers and markets, reflecting the following outcomes	2	Provide basic first aid	4
		Explain and use procedures	6	Understanding and dealing with HIV / Aids personally and in the workplace	3
				Business Relations	
				Frame and implement an individual action plan to improve productivity within an organisational unit	3
				Life skills	
				Develop a personal portfolio and a learning	6

			plan and prepare for assessment, reflecting the following outcomes	
			Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	48	Total Core	82	Minimum elective credits required for qualification
				12

No. 462

19 April 2002

National Certificate in Metal and Engineering Manufacturing Processes: NQF Level 4**Field:** Manufacturing, engineering and technology- NSB 06**Sub-field:** Manufacturing & assembly**Level:** 4**Credit:** 127**Issue date:****Review date:****Rationale for the qualification**

Why should I become qualified? How will a qualification help me?

The metal and engineering industry is characterised by diverse manufacturing processes operating in a competitive and challenging environment.

The manufactured products have to respond to a wide variety of exacting customer and consumer requirements.

This is the third qualification in a series for learners who want to follow a career in metal and engineering manufacturing processes. This qualification aims to further develop people who have worked on manufacturing processes for a number of years. It will enable them to set up such processes and perform troubleshooting on potential machine malfunctioning.

This qualification reflects the skills, knowledge and understanding required to participate effectively in the metal and engineering industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training.

The qualification also forms the basis for further development.

Purpose

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to achieve competence in setting up manufacturing processes.

This qualification recognises the skills, knowledge and values acquired by learners involved in setting up manufacturing processes and performing troubleshooting on potential machine malfunctions

The main skills that are recognised in this qualification are

- Setting up production machinery
- Anticipating and troubleshooting machine malfunctioning

Qualified learners will also understand:

- How to read and interpret engineering drawings
- Analysis of information
- Principles and concepts which underpin complex manufacturing processes
- Planning of own work

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts. They will also be able to maintain and support the various policies and procedures related to the safety, health, environment and quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in optimising and maintaining the efficiencies of the production process.

Access to qualification

Open access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place

My previous learning

This qualification assumes learners have a national certificate in metals and engineering manufacturing level 3.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and maths beyond basic literacy and numeracy
- Concepts of science and technology related to material, machinery and equipment in use in the engineering manufacturing process
- Concepts of organising factors in labour, business and the economy
- Role and purpose of procedures related to workplace relationships, roles and responsibilities

Exit level outcomes

On what performance will I be assessed?

Exit level outcome 1

Demonstrate an understanding of and an ability to set up production machines

Associated Assessment Criteria

- Own work planned and scheduled
- Product produced according to company specifications
- Adjustments to machinery made appropriately based on information gathered from the process

Exit level outcome 2

Demonstrate an understanding of and an ability to troubleshoot potential machinery malfunctions

Associated Assessment Criteria

- Gathered information is analysed
- Machine downtime is minimised
- Improvements to machinery functioning are made and followed up on.
- Production and maintenance personnel consulted
- Defect types categorised and root cause of problem established
- Equipment repair and preventive maintenance needs communicated to maintenance specialists
- Can respond to questions and discuss issues related to maintenance issues on machinery

Exit level outcome 3

Maintain and support procedures to solve a variety of problems, both familiar and unfamiliar, within metal and engineering manufacturing process and operate within familiar and new situations, taking responsibility and making decisions

Associated Assessment Criteria

- Solutions to production problems are based on a clear analysis of information gathered through diagnostic procedures.
- Procedures are modified to respond to unfamiliar problems where appropriate
- Can respond to questions and discuss issues related to familiar and unfamiliar problems arising in the manufacturing of metal and engineering products
- All actions related to problem solving are accurately recorded for future reference

Exit level outcome 4

Communicate across functional boundaries and demonstrate the ability to analyse information to identify problems and determine trends

Associated Assessment Criteria

- Conditions, evidence and incidences are reported accurately in a timely manner and discussed with peers and management
- Data gathered through diagnostic procedures is examined systematically and analysis is repeated until problem is solved.
- Analysed information is presented in appropriate formats

Exit level outcome 5

Promote, implement and maintain procedures that support safety, health and the environment, including reporting to and coaching team members

Associated Assessment Criteria

- Safety, health and environmental procedures in area of responsibility are implemented and updated where required
- Team members are working in a safe and environmentally aware manner.
- Team members are coached where required
- All actions related to maintaining safety, health and environmental procedures are documented

Exit level outcome 6

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes- based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment

How will I be assessed?

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or 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 maybe introduced if pertinent to any of the exit-level outcomes.

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

The qualification and the standards have been written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do.

Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should I not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit my needs.

Criteria for the registration of assessors

How will I know that the assessor will not prejudge or prejudice me?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in metal engineering manufacturing.

To assure the quality of the assessment process the moderation should cover one or more of the following:

1. assessor credentials
2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of metal and engineering manufacturing – with a minimum of 1 year in this type of manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 4

Level 4 Fundamental		Level 4 Core		Level 4 Elective Choice of:	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Set up production machines	30	Perform general engineering grinding operations	14
Choice of workplace communication unit standards reflecting the following outcomes	5	Anticipate and troubleshoot machine functioning	16	Change and set tooling	16
Maths		Select, use and care for marking off/out equipment: non routine shapes		Safety, Health & Environmental Quality Assurance	
SAQA registered maths standards at this level	16	People: interacting, leading, developing		Perform role of safety representative	4
The outcomes should, however, reflect the following outcomes		Assist and coach workgroup members as needed, reflecting the following outcomes	8	Business Relations	
Working with information		Business Relations		Frame and implement an individual action plan to improve productivity within an organisational unit	3
Unit standards reflecting the following outcomes	5	Contribute to the maintenance of business processes	10	Life skills	
				Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6
Life skills					
Explain financial planning options	2				

(savings, retirement, insurance) and develop a plan					
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	433	Total Core	72	Minimum Elective credits required for qualification	12
Total for qualification	127				

No. 463

19 April 2002

National Certificate in Automotive Component Manufacturing and Assembly: NQF Level 2**Field:** Manufacturing, engineering and technology- NSB 06**Sub-field:** Manufacturing & assembly**Level:** 2**Credit:** 136**Issue date:****Review date:****Rationale of the qualification:**

Why should I become qualified? How will a qualification help me?

The automotive component industry is characterized by a sophisticated high-volume manufacturing process within a competitive and challenging environment. The manufactured and assembled components have to respond to a wide variety of exacting customer and consumer requirements. In addition the industry has to respond to competition from exports, export markets, on-going development of new products as the result of changing customer needs and environmental issues. This means that people working in the industry require a range of skills and knowledge to help them respond to the exacting quality requirements and ongoing change.

This is the first qualification in a series for learners who want to follow a career in automotive component manufacturing and assembly processes. This series of qualifications reflects the skills, knowledge and understanding required to participate effectively in the industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training. For the new entrant, this qualification recognises the applied competence needed by a productive person in a structured workplace.

The qualification also forms the basis for further development.

Purpose:

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to work effectively within the automotive component manufacturing environment and meet the challenges of such an environment.

This qualification recognises the skills, knowledge and values acquired by learners involved in operating and monitoring manufacturing machinery and assembling components and working in enterprises using such processes.

The chief skills that are recognised in this qualification are assembling components and recognising and responding to changes in the manufacturing of components. This capability requires an understanding of quality requirements and monitoring material flow. Hand skills play a small role in this qualification.

Qualified learners will also understand:

the basics of how a business functions

their role in the business, i.e. in production and related activities

how they are affected by legislation, regulations, agreements and policies related to their particular work environment.

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts. They will also understand how they should operate within the legislative, safety and quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes.

Access to the Qualification:

Open Access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place:

My previous learning:

This qualification assumes learners have a General Education and Training Certificate at NQF level 1, or alternatively, ABET qualifications.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Literacy and numeracy
- Basic concepts of science and technology

Exit Level Outcomes and Assessment Criteria:

On what performance will I be assessed?

Exit level outcome 1

Demonstrate an understanding of the manufacturing and assembly process and an ability to produce automotive components that meet quality and output requirements, working safely and in an environmentally aware manner.

Associated Assessment Criteria

- Output and quality requirements met
- Product is finished and packaged to required standards
- Safe working practices are adhered to
- Can respond to questions and discuss issues related to the manufacturing and assembly process relevant to the outcomes

Exit level outcome 2

Recognise and respond to routine problems related to tools, equipment and material supply in the manufacturing and assembly process

Associated Assessment Criteria

- Responses are appropriate to the nature of the problem
- Problems are accurately reported to relevant personnel in a timely manner
- Can respond to questions and discuss issues related to routine problems in the manufacturing and assembly of automotive components

Exit level outcome 3

Understand and use appropriate tools and equipment to:

- make simple adjustments or changes to equipment and assemblies
- convey (move, lift) materials or components

Associated Assessment Criteria

- Adjustments or changes are appropriate
- Downtime is minimised
- No material or product is damaged or its quality compromised
- Quality, safety and environmental procedures are followed

Exit level outcome 4

Communicate with peers and members of supervisory/management levels by demonstrating the ability to summarise information and express opinions on given information in spoken or written form

Associated Assessment Criteria

- Communication is regular and ongoing
- Information is clear and accurate and conveyed in a timely manner
- Relationships with peers and supervisory./management levels are established and functioning

Exit level outcome 5

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated Assessment:

How will I be assessed?

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

Observing the learner at work (both in the primary activity as well as other interactions)

Asking questions and initiating short discussions to test understanding

Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or 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 introduced if pertinent to any of the exit-level outcomes.

The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles which underpin the activities and the manufacturing process. The assessment process should also establish how the critical outcomes have been advanced by the learning process.

Recognition of prior learning:

How will learning I already have be included in this qualification?

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

Articulation possibilities:

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation Options:

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in automotive component manufacturing and assembly.

To assure the quality of the assessment process the moderation should cover one of more of the following:

- assessor credentials
- the assessment instrument
- the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing and assembly – with a minimum of 4 years in an automotive component manufacturing and assembly environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 2

Level 2 Fundamental		Level 2 Core		Level 2 Elective choice of	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Operate and monitor machinery	12	Mark off basic regular engineering shapes	6
Choice of workplace communication unit standards reflecting the following outcomes	5	Assemble components	12	Prepare metal surfaces	6
Maths	16	Complete post production and finishing operations	12	Read and interpret basic engineering drawings	8
SAQA registered maths standards at this level		Use and care for tools and equipment	10		
The outcomes should, however, reflect the following outcomes		Perform basic welding/joining of metals	8	Safety, Health & Environmental Quality Assurance	
Working with information		Safety, Health & Environmental Quality Assurance		Basic first aid	4
Using information and technology, reflecting the following outcomes	5	Maintain a safe and productive work area, reflecting the following outcomes	8	Basic fire fighting	4
Life Skills		People: interacting, leading, developing		Dealing with safety, health and environmental emergencies in the workplace	4
Manage personal finance	4	Working in groups, reflecting the following outcomes	4	Business Relations	
Understanding and dealing with HIV / Aids personally and in the workplace	3	Business Relations		Frame and implement an individual action plan to improve productivity within an organisational unit	3
Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6	Explain my role within business, my rights, contributions and responsibilities, reflecting the following outcomes	4		
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	54	Total Core	70	Minimum elective credits required for qualification	12
Total for qualification	136				

National Certificate in Automotive Component Manufacturing and Assembly: NQF Level 3

Field: Manufacturing, engineering and technology- NSB 06

Sub-field: Manufacturing & assembly

Level: 3

Credit: 142

Issue date:

Review date:

Rationale of the qualification:

Why should I become qualified? How will a qualification help me?

The automotive component industry is characterized by a sophisticated high-volume manufacturing process within a competitive and challenging environment. The manufactured and assembled components have to respond to a wide variety of exacting customer and consumer requirements. In addition the industry has to respond to competition from exports, export markets, on-going development of new products as the result of changing customer needs and environmental issues. This means that people working in the industry require a range of skills and knowledge to help them respond to the exacting quality requirements and ongoing change.

This is the second qualification in a series for learners who want to follow a career in automotive component manufacturing and assembly processes. This series of qualifications reflects the skills, knowledge and understanding required to participate effectively in the industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training. The qualification also forms the basis for further development.

Purpose:

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to work effectively within the automotive component manufacturing environment and meet the challenges of such an environment.

The chief skills that are recognised in this qualification are monitoring, adjusting and maintaining a production process including the performance of first line maintenance on equipment utilised and the handling and care of materials required for such a process.

Qualified learners will also understand:

- Basic approaches to using and looking after machinery and equipment
- Procedures related to various aspects of the production process
- Principles and concepts related to workplace activities, materials and equipment

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts. They will also be able to maintain and support the various policies and procedures related to the safety, health, environment and quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes.

Access to the Qualification:

Open Access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience

Learning assumed to be in place:

My previous learning:

This qualification assumes learners have a national certificate in automotive component manufacturing and assembly level 2.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and maths beyond basic literacy and numeracy
- Concepts of science and technology related to material, machinery and equipment in use in the manufacturing process
- Concepts of organising factors in labour, business and the economy
- Role and purpose of procedures related to workplace relationships, roles and responsibilities

Exit Level Outcomes and Assessment Criteria:

On what performance will I be assessed?

Exit level outcome 1

Demonstrate an understanding of how to adjust and maintain an automotive component manufacturing and assembly process to ensure process remains within defined safety and quality parameters.

Associated Assessment Criteria

- Quality products produced
- Machinery adjusted and maintained during production run
- Materials handled and cared for
- Work is undertaken in a safe and environmentally aware manner

Exit level outcome 2

Select appropriate procedures to solve familiar problems within an automotive component manufacturing process and operate within clearly defined contexts, with some scope for personal decision-making and responsibility

Associated Assessment Criteria

- Appropriate procedures are selected to solve problems in an efficient and effective manner
- Unfamiliar problems are accurately reported to appropriate personnel
- Can respond to questions and discuss issues related to familiar problems in the manufacturing and assembly of automotive components

Exit level outcome 3

Demonstrate a familiarity with first line maintenance procedures and operations for production machinery in area of responsibility

Associated Assessment Criteria

- Process agents applied consistently and systematically
- Wearing parts replaced on machinery as required
- Can respond to questions and discuss issues related to first line maintenance issues on machinery

Exit level outcome 4

Communicate with peers, customers and members of supervisory/management levels by demonstrating the ability to gather and summarise information from a range of sources and produce coherent presentations in a prescribed format

Associated Assessment Criteria

- Information is gathered from a range of sources and accurately summarised into a prescribed format.
- Information is clear and accurate and presented in a timely manner in the required format to appropriate parties.
- Relationships with peers and supervisory./management levels are established and functioning

Exit level outcome 5

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained

- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond

Integrated Assessment:

How will I be assessed?

The qualification and the standards have been written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do.

Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should I not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit my needs.

Criteria for the registration of assessors

How will I know that the assessor will not prejudge or prejudice me?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning:

How will learning I already have be included in this qualification?

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

Articulation possibilities:

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation Options:

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in automotive component manufacturing and assembly.

To assure the quality of the assessment process the moderation should cover one of more of the following:

1. assessor credentials
2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing and assembly – with a minimum of 4 years in an automotive component manufacturing and assembly environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 3

Level 3 Fundamental		Level 3 Core		Level 3 Elective Choice of:	
ommunication		Manufacturing		Manufacturing	
AQA registered communication standards at his level	15	Adjust and maintain production machinery	30	Coat material and components	4
hoice of workplace communication unit tandards reflecting the following outcomes	5	Perform first line maintenance	14	Select, use and care for marking off/out equipment: routine shapes	8
aths	16	Read and interpret engineering drawings	12	Operate a lift truck	6
AQA registered maths standards at this level		Materials		Operate a crane	10
he outcomes should, however, reflect the ollowing outcomes		Handle and care for materials	12	Safety, Health & Environmental Quality Assurance	
orking with information		People: interacting, leading, developing		Perform role of safety representative	4
nalyse information, reflecting the following outcomes	5	Contribute to work group performance	3	Provide basic first aid	4
eyboard skills to capture and record information	3	Develop learning strategies and techniques, reflecting the following outcomes	3	Understanding and dealing with HIV / Aids personally and in the workplace	3
ife skills		Business Relations		Business Relations	
iscuss and explain personal financial concepts (pay educutions, bank accounts, interest, insurance)	4	Relate own role to role of business, customers and markets, reflecting the following outcomes	2	Frame and implement an individual action plan to improve productivity within an organisational unit	3
		Explain and use procedures	6	Life skills	
				Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6
				Other standards or additional learning related to the purpose of the qualification	
				Minimum elective credits required for qualification	12
total Fundamental	48	Total Core	82	Total Elective	12
Total for qualification	142				

No. 465

19 April 2002

National Certificate in Automotive Component Manufacturing and Assembly: NQF Level 4**Field:** Manufacturing, engineering and technology- NSB 06**Sub-field:** Manufacturing & assembly**Level:** 4**Credit:** 133**Issue date:****Review date:****Rationale of the qualification:**

Why should I become qualified? How will a qualification help me?

The automotive component industry is characterized by a sophisticated high-volume manufacturing process within a competitive and challenging environment. The manufactured and assembled components have to respond to a wide variety of exacting customer and consumer requirements. In addition the industry has to respond to competition from exports, export markets, on-going development of new products as the result of changing customer needs and environmental issues. This means that people working in the industry require a range of skills and knowledge to help them respond to the exacting quality requirements and ongoing change.

This is the third qualification in a series for learners who want to follow a career in automotive component manufacturing and assembly processes. This series of qualifications reflects the skills, knowledge and understanding required to participate effectively in the industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training. The qualification also forms the basis for further development.

Purpose:

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to work effectively within the automotive component manufacturing environment and meet the challenges of such an environment.

The chief skills that are recognised in this qualification are:

- Setting up a process
- Programming and setting up machinery
- Diagnosing and troubleshooting on equipment functioning
- Problem solving skills to maintain quality, safety and performance

Qualified learners will also understand:

- The principles and concepts which underpin the complex variables of the automotive component manufacturing and assembly process
- How to plan, schedule and evaluate own work
- How to read and interpret technical drawings
- How to interact with team leaders and develop the capacity of team members to maintain and support quality, safety and health systems.

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts. They will also be able to maintain and support the various policies and procedures related to the safety, health, environment and quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes

Access to the Qualification:

Open Access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place:

My previous learning:

This qualification assumes learners have a national certificate in automotive component manufacturing and assembly level 3.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and maths related to organising and controlling their environment
- Concepts of science and technology used to explain and help solve problems in the manufacturing process
- Concepts of contributing factors in labour, business and the economy
- Role and purpose of systems which support workplace relationships, procedures, roles and responsibilities

Exit Level Outcomes and Assessment Criteria:

On what performance will I be assessed?

Exit level outcome 1

Demonstrate an understanding of how to set up and control an automotive component manufacturing and assembly process to meet quality, safety, health and environmental specifications

Associated Assessment Criteria

- Quality products produced
- Technical drawings understood and interpreted
- Machinery set up to specifications
- Appropriate digital programming equipment and tools are used

Exit level outcome 2

Maintain and support procedures to solve a variety of problems, both familiar and unfamiliar, within an automotive component manufacturing process and operate within familiar and new situations, taking responsibility and making decisions

Associated Assessment Criteria

- Solutions to production problems are based on a clear analysis of information gathered through diagnostic procedures.
- Procedures are modified to respond to unfamiliar problems where appropriate
- Can respond to questions and discuss issues related to familiar and unfamiliar problems arising in the manufacturing and assembly of automotive components
- All actions related to problem solving are accurately recorded for future reference

Exit level outcome 3

Demonstrate a familiarity with machinery operations and procedures in order to diagnose and troubleshoot machinery functioning.

Associated Assessment Criteria

- Machinery functioning and operations explained
- Production and maintenance personnel consulted
- Defect types categorised and root cause of problem established
- Equipment repair and preventive maintenance needs communicated to maintenance specialists
- Can respond to questions and discuss issues related to maintenance issues on machinery

Exit level outcome 4

Promote, implement and maintain procedures that support safety, health and the environment, including reporting to and coaching team members

Associated Assessment Criteria

- Safety, health and environmental procedures in area of responsibility are implemented and updated where required
- Team members are working in a safe and environmentally aware manner.
- Team members are coached where required
- All actions related to maintaining safety, health and environmental procedures are documented

Exit level outcome 5

Communicate and present information clearly and reliably and demonstrate the ability to analyse information to identify problems and determine trends

Associated Assessment Criteria

- Conditions, evidence and incidences are reported accurately in a timely manner and discussed with peers and management
- Data gathered through diagnostic procedures is examined systematically and analysis is repeated until problem is solved.
- Records are available for scrutiny and future reference

Exit level outcome 6

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated Assessment:

How will I be assessed?

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or 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 introduced if pertinent to any of the exit-level outcomes.

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

The qualification and the standards have been written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do. Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should I not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit my needs.

Criteria for the registration of assessors

How will I know that the assessor will not prejudice or prejudice me?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning:

How will learning I already have be included in this qualification?

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

Articulation possibilities:

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation Options:

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in automotive component manufacturing and assembly.

To assure the quality of the assessment process the moderation should cover one of more of the following:

- assessor credentials
- the assessment instrument
- the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing – with a minimum of 4 years in an automotive component manufacturing and assembly environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 4

Level 4 Fundamental		Level 4 Core		Level 4 Elective Choice of:	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Set up production machines	30	Select, use and care for marking off/out equipment: non routine shapes	8
Choice of workplace communication unit standards reflecting the following outcomes	5	Anticipate and troubleshoot machine functioning	16	Safety, Health & Environmental Quality Assurance	
Maths	16	Change and set tooling	16	Perform role of safety representative	4
SAQA registered maths standards at this level		People: interacting, leading, developing		Business Relations	
The outcomes should, however, reflect the following outcomes		Assist and coach workgroup members as needed, reflecting the following outcomes	8	Frame and implement an individual action plan to improve productivity within an organisational unit	3
Working with information		Business Relations		Life skills	
Unit standards reflecting the following outcomes	5	Contribute to the maintenance of business processes	10	Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6
				Explain financial planning options (savings, retirement, insurance) and develop a plan	2
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	41	Total Core	80	Minimum elective credits required for qualification	12
Total for qualification	133				

No. 466

19 April 2002

National Certificate in Automotive Component Manufacturing and Assembly: NQF Level 5**Field:** Manufacturing, engineering and technology- NSB 06**Sub-field:** Manufacturing & assembly**Level:** 5**Credit:** 134**Issue date:****Review date:****Rationale of the qualification:**

Why should I become qualified? How will a qualification help me?

The automotive component industry is characterized by a sophisticated high-volume manufacturing process within a competitive and challenging environment. The manufactured and assembled components have to respond to a wide variety of exacting customer and consumer requirements. In addition the industry has to respond to competition from exports, export markets, on-going development of new products as the result of changing customer needs and environmental issues. This means that people working in the industry require a range of skills and knowledge to help them respond to the exacting quality requirements and ongoing change.

This is the fourth qualification in a series for learners who want to follow a career in automotive component manufacturing and assembly processes. This series of qualifications reflects the skills, knowledge and understanding required to participate effectively in the industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training. For the new entrant, this qualification recognises the applied competence needed by a productive person in a structured workplace.

The qualification also forms the basis for further development

Purpose:

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to work effectively within the automotive component manufacturing environment and meet the challenges of such an environment.

This qualification recognises the skills, knowledge and values acquired by learners involved in maintaining and optimising the automotive component manufacturing and assembly process including planning, scheduling and arranging resources and maintenance requirements on equipment and machinery

The chief skills that are recognised in this qualification are :

- Maintaining production efficiencies
- Optimising the process
- Managing inventory and the supply chain of resources
- Coordinating predictive and preventive maintenance
- Co-ordinating the work team to produce products

Qualified learners will also understand:

- How to maintain and influence relationships in a complex production environment
- How to achieve change
- How to work with a range of information sources to optimise performance and quality

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts. They will also be able to maintain and support the various

policies and procedures related to the safety, health, environment and quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes.

Access to the Qualification:

Open Access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place:

My previous learning:

This qualification assumes learners have a national certificate in automotive manufacturing level 4.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and maths related to solving problems in the automotive component manufacturing and assembly environment
- Concepts of science and technology to identify opportunities for improvement
- Concepts of influencing small levels of changes in labour, business and the economy
- Dealing with change in relation to systems that support workplace relationships, procedures, roles and responsibilities

Exit Level Outcomes and Assessment Criteria:

On what performance will I be assessed?

Exit level outcome 1

Demonstrate an understanding of how to maintain the efficiencies of an automotive component manufacturing and assembly process and how to identify opportunities for optimising such a process

Range: Maintaining and optimising the process includes maintaining and optimising aspects of equipment operation, materials usage and inventory management, the utilisation of personnel, quality, safety, health, and environmental practices

Associated Assessment Criteria

- Production efficiencies are maintained.
- Performance and training issues affecting quality, safety, health, and the environment are identified and reported
- Process output is recorded and trends mapped
- Options to achieve process improvements are generated and tested and reflect a clear understanding of issues.

Exit level outcome 2

Determine processing parameters for new products and introduce them to the production line up

Associated Assessment Criteria

- Complex drawings are read and interpreted
- Operating, quality and safety parameters for new products are developed and implemented
- New products meet customer specifications
- Procedures are accurately and thoroughly documented for future reference

Exit level outcome 3

Demonstrate an ability to coordinate work activities and plan, schedule and arrange work.

Range: Coordinating activities include the work of teams, the supply of materials, the scheduling of maintenance on machinery and equipment

Associated Assessment Criteria

- Production schedules are met
- Work activities are planned
- Goals set are specific, measurable and achievable and aligned to customer and business needs
- Schedules are developed in consultation with relevant parties and any scheduling conflicts are resolved.

Exit level outcome 4

Counsel, lead and guide and influence processes, team members and management and negotiate shop floor issues

Associated Assessment Criteria

- Relationships with team members and management are maintained to ensure the quality and flow of output remain constant.
- Recommendations for work improvements are clearly communicated, accepted and implemented
- Shop floor issues are resolved in a timely manner to the satisfaction of all parties.

Exit level outcome 5

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated Assessment:

How will I be assessed?

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he 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 introduced if pertinent to any of the exit-level outcomes.

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

The qualification and the standards have been written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do. Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should I not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit my needs.

Criteria for the registration of assessors

How will I know that the assessor will not prejudge or prejudice me?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning:

How will learning I already have be included in this qualification?

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

Articulation possibilities:

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation Options:

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in automotive component manufacturing and assembly.

To assure the quality of the assessment process the moderation should cover one of more of the following:

- assessor credentials
- the assessment instrument
- the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing and assembly – with a minimum of 4 years in an automotive component manufacturing and assembly environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 5

Level 5 Fundamental		Level 5 Core		Level 5 Elective: Choice of	
Communication		Manufacturing		Manufacturing	
Choice of communication unit standards reflecting use of communication in work-related contexts outcomes and reflecting the following outcomes	20	Optimise a production process	24	Co-ordinate installation of new manufacturing equipment	10
		Maintain production efficiencies	12	Production planning	8
		Coordinate predictive and preventive maintenance	12		
Maths		Materials		Materials	
Choice of any mathematics literacy unit standards at this level	16	Manage inventory	3	Order and ensure delivery from external suppliers	4
The outcomes should, however, reflect the following outcomes		Safety, Health & Environmental Quality Assurance		Safety, Health & Environmental Quality Assurance	
		Support and maintain the safety system in the workplace, reflecting the following outcomes	6	Counsel workgroup members in respect of HIV and AIDS	3
		Maintain quality system and implement continuous improvement processes, reflecting the following outcomes	6	Conduct special purpose laboratory tests	4
		People: interacting, leading, developing		People: interacting, leading, developing	
		Co-ordinate work group to produce product,	8	Lead workgroups, reflecting the following outcomes	10
				Develop the skills of the workgroup, reflecting the following outcomes	10
Working with information		Business Relations		Business Relations	
Analysing information, reflecting the following outcomes	5	Maintain business processes	10	Conduct in-service evaluation of manufactured product	6
Total Fundamental	41	Total Core	81	Minimum elective credits required for qualification	12
Total for qualification	134				

No. 467

19 April 2002

National Certificate in Iron and Steel Manufacturing -NQF Level 2**Field: Manufacturing, engineering and technology- NSB 06****Sub-field: Manufacturing & assembly****Level: 2****Credit: 126****Issue date:****Review date:****Rationale for the qualification**

Why should I become qualified? How will a qualification help me?

The iron and steel manufacturing industry is characterised by sophisticated manufacturing processes operating in a competitive and challenging environment. The manufactured products have to respond to a wide variety of exacting customer requirements. In addition the industry has to respond to global competition and ongoing development of new products as a result of changing customer needs and safety, health, environmental, quality and risk management issues. This is the first qualification in a series designed for learners who want to follow a career in iron and steel manufacturing. The series outlines a learning progression from NQF level 2 to NQF level 4 for learners learning and working in the following areas within iron and steel manufacturing: iron making, the direct reduction process, coke making, steel making and refining, liquid metal casting, steel reheating and hot working, steel cold working, steel cold processing and product coating. It reflects the skills, knowledge and understanding required to participate effectively in these manufacturing processes within the industry, whether in small, medium or large operations. For those who have been in the workplace for a long time, this qualification represents part of the RPL

process to acknowledge workplace skills acquired without the benefit of formal education or training. For the new entrant, this qualification recognises the applied competence needed by a productive person in an iron and steel manufacturing workplace. The qualification also forms the basis for further development.

Purpose:

What does this qualification mean?

It is intended that qualifying learners will be able to work in the iron and steel manufacturing environment and be able to perform a range of activities to support iron and steel manufacturing processes. The key skills, knowledge and understanding that are reflected in this qualification are those of preparing, using and operating iron and steel manufacturing equipment. Qualified learners will also understand how they should operate within the legislative, safety, health, environmental, quality and risk management systems that govern their workplace and how to apply the various policies and procedures related to these systems. Qualifying in the exit level outcomes will allow learners to participate in workplace activities. What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in iron and steel manufacturing processes. Learners will also have foundational competence in mathematics, science, reading, writing and speaking relevant to the iron and steel manufacturing industry.

Access to the qualification

Open access

How can I acquire the qualification?

This qualification is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience

Learning assumed to be in place

My previous learning

This qualification assumes learners have a General Education and Training Certificate at NQF level 1, or alternatively, ABET level 4 qualifications.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Literacy and numeracy
- Basic concepts of science and technology .

Exit level outcomes and Assessment Criteria:

On what performance will I be assessed?

Qualifying learners will be able to:

Exit level outcome 1

Demonstrate an understanding of a range of activities supporting iron and steel manufacturing processes and an ability to prepare, use and operate iron and steel manufacturing equipment, working safely with due care for self and fellow workers

Associated Assessment Criteria

- Manufacturing equipment is prepared, used and operated according to procedures
- A clean safe work area is maintained
- Consumables required are checked according to quality assurance requirements
- Prepared materials are handled and cared for
- Safety, health, environmental, quality and risk management policies and procedures are applied and adhered to
- Can respond to questions and discuss issues related to supporting activities within iron and steel manufacturing processes relevant to the outcomes

Exit level outcome 2

Recognise and respond to routine maintenance and operational problems related to the preparation, use and operation of iron and steel manufacturing equipment during the process

Associated Assessment Criteria

- Responses are appropriate to the nature of the problem
- Routine first line maintenance is performed regularly and consistently
- Problems are accurately reported to relevant personnel in a timely manner
- Can respond to questions and discuss issues related to routine problems

Exit level outcome 3

Understand and use appropriate tools, services and equipment to:

- make simple adjustments or changes to equipment
- convey (move, lift) materials or components

Associated Assessment Criteria

- Adjustments or changes are appropriate
- No materials or components are damaged or quality compromised
- Quality, safety and environmental procedures are followed

Exit level outcome 4

Communicate with team members and members of supervisory/management levels by demonstrating the ability to summarise information and express opinions on given information in spoken or written form

Associated Assessment Criteria

- Communication is regular and ongoing
- Daily work schedules and manufacturing issues in work area are discussed on a regular basis with other team members
- Information relevant to own work context and manufacturing process in area of work is gathered, recorded and reported when required in an appropriate manner.
- Relationships with team members and supervisory./management levels are established and functioning

Exit level outcome 5

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes- based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment

How will I be assessed?

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or 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 introduced if pertinent to any of the exit-level outcomes.

The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities and iron and steel manufacturing processes. The assessment process should also establish how the critical outcomes have been advanced by the learning process.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in iron and steel manufacturing.

To assure the quality of the assessment process the moderation should cover one or more of the following:

1. assessor credentials
2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the *Manufacturing, Engineering and Related Services*, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of iron and steel manufacturing – with a minimum of 1 year in an iron and steel manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 2

Level 2 Fundamental		Level 2 Core		Level 2 Elective choice of	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Prepare, use and operate equipment to support a manufacturing process	32	Complete post production and finishing operations	12
Choice of workplace communication unit standards reflecting the following outcomes	5	Handle and care for prepared materials	4	Prepare, use and operate equipment to support a manufacturing process (in additional iron and steel manufacturing processes up or down stream, some process and material knowledge and skills already assumed)	16
Maths	16				
SAQA registered maths standards at this level					
The outcomes should, however, reflect the following outcomes		Safety, Health & Environmental Quality Assurance		Safety, Health & Environmental Quality Assurance	
Working with information		Maintain a safe and productive work area, reflecting the following outcomes	8	Dealing with safety, health and environmental emergencies in the workplace	4
Using information and technology, reflecting the following outcomes	5	Basic first aid	4		
Life Skills		Basic fire fighting	4		
Manage personal finance	4	People: interacting, leading, developing			
Understanding and dealing with HIV / Aids personally and in the workplace	3	Working in groups, reflecting the following outcomes	4		
Develop a personal portfolio and a learning plan and prepare for assessment, reflecting	6	Business Relations			

the following outcomes					
		Explain my role within business, my rights, contributions and responsibilities, reflecting the following outcomes	4		
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	53	Total Core	60	Minimum elective credits required for qualification	12
Total for qualification	126				

No. 468

19 April 2002

National Certificate in Iron and Steel Manufacturing : NQF Level 3**Field:** Manufacturing, engineering and technology- NSB 06**Sub-field:** Manufacturing & assembly**Level:** 3**Credit:** 138**Issue date:****Review date:****Rationale for the qualification**

Why should I become qualified? How will a qualification help me?

The iron and steel manufacturing industry is characterised by sophisticated manufacturing processes operating in a competitive and challenging environment. The manufactured products have to respond to a wide variety of exacting customer requirements. In addition the industry has to respond to global competition and ongoing development of new products as a result of changing customer needs and safety, health, environmental, quality and risk management issues.

This is the second qualification in a series designed for learners who want to follow a career in iron and steel manufacturing. The series outlines a learning progression from NQF level 2 to NQF level 4 for learners learning and working in the following areas within iron and steel manufacturing: iron making, the direct reduction process, coke making, steel making and refining, liquid metal casting, steel reheating and hot working, steel cold working, steel cold processing and product coating. It reflects the skills, knowledge and understanding required to

participate effectively in these manufacturing processes within the industry, whether in small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training.

The qualification also forms the basis for further development.

Purpose of qualification

What does this qualification mean?

It is intended that qualifying learners will be able to perform a range of activities to maintain process equipment availability and readiness for iron and steel manufacturing processes.

The key skills, knowledge and understanding that are reflected in this qualification are those of preparing, setting up and monitoring process equipment.

Qualified learners will also understand how they should operate within the legislative, safety, health, environmental, quality and risk management systems that govern their workplace and how to apply the various policies and procedures related to these systems.

Qualifying in the exit level outcomes will allow learners to participate in workplace activities.

Learners will also have foundational competence in mathematics, science, reading, writing and speaking relevant to the iron and steel manufacturing industry.

Access to qualification

Open access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place

My previous learning

This qualification assumes learners have a national certificate in iron and steel manufacturing level 2.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- o Language and maths at NQF Level 2.
- o Concepts of science and technology related to material, machinery and equipment in use in iron and steel manufacturing processes.
- o Concepts of organising factors in labour, business and the economy
- o Role and purpose of procedures related to workplace:
 - o relationships
 - o roles
 - o responsibilities

Exit level outcomes and Assessment Criteria

On what performance will I be assessed?

Qualifying learners will be able to:

Exit level outcome 1

Demonstrate an understanding of, and an ability to, prepare and set up process equipment for iron and steel manufacturing processes and monitor the performance of such equipment, working safely and with due care for fellow workers and the environment

Associated Assessment Criteria

- Set up of process equipment meets equipment specifications and manufacturing requirements
- Process equipment availability and readiness for iron and steel manufacturing processes is maintained
- Process equipment is monitored according to manufacturing requirements
- A clean and safe work area is maintained.

- Safety, health, environmental, quality and risk management policies and procedures are applied and adhered to
- Can respond to questions and discuss issues related to process equipment set up activities relevant to the outcomes

Exit level outcome 2

Select appropriate procedures to solve familiar problems within iron and steel manufacturing processes and operate within clearly defined contexts, with some scope for personal decision-making and responsibility

Associated Assessment Criteria

- Appropriate procedures are selected to solve problems in an efficient and effective manner
- Unfamiliar problems are accurately reported to appropriate personnel
- Can respond to questions and discuss issues related to familiar problems in the setting up and monitoring of process equipment for iron and steel manufacturing

Exit level outcome 3

Demonstrate a familiarity with first line maintenance procedures and operations for process equipment in area of responsibility

Associated Assessment Criteria

- First line maintenance is performed regularly and consistently on process equipment
- Can respond to questions and discuss issues related to first line maintenance issues on process equipment

Exit level outcome 4

Understand and use appropriate instruments make adjustments or changes to process equipment set up

Associated Assessment Criteria

- Adjustments or changes are appropriate
- No equipment or components are damaged or quality compromised

- Quality, safety and environmental procedures are followed
- Instruments are used and cared for according to manufacturer's requirements and in-company procedures

Exit level outcome 5

Communicate with team members, internal customers and members of supervisory/management levels by demonstrating the ability to gather and summarise information from a range of sources and report this information

Associated Assessment Criteria

- Information is gathered from a range of sources and accurately summarised and reported in an appropriate and timely manner to relevant parties
- Manufacturing issues in work area are discussed and resolved on a regular basis with other team members, internal customers and supervisors/management
- Relationships with peers and supervisory/management levels are established and functioning

Exit level outcome 6

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment**How will I be assessed?**

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he 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 introduced if pertinent to any of the exit-level outcomes.

The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles which underpin the activities and iron and steel manufacturing processes. The assessment process should also establish how the critical outcomes have been advanced by the learning process.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in iron and steel manufacturing.

To assure the quality of the assessment process the moderation should cover one of more of the following:

1. assessor credentials
2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the *Manufacturing, Engineering and Related Services*, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of iron and steel manufacturing– with a minimum of 18 months in an iron and steel manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 3

Level 3 Fundamental		Level 3 Core		Level 3 Elective Choice of:	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Prepare and set up process equipment	36	Prepare and set up process equipment (in additional iron and steel manufacturing processes up or down stream, some process and material knowledge and skills already assumed)	18
Choice of workplace communication unit standards reflecting the following outcomes	5	Perform first line maintenance	14	Operate a lift truck	6
Maths	16	Safety, Health & Environmental Quality Assurance		Operate a crane	10
SAQA registered maths standards at this level		Explain and apply safety procedures, reflecting the following outcomes >>	6	Safety, Health & Environmental Quality Assurance	
The outcomes should, however, reflect the following outcomes		Perform quality procedures, reflecting the following outcomes	8	Perform role of safety representative	4
Working with information		People: interacting, leading, developing		Provide basic first aid	4
Analyse information, reflecting the following outcomes	5	Contribute to work group performance	3	Understanding and dealing with HIV / Aids personally and in the workplace	3
Keyboard skills to capture and record information	3	Develop learning strategies and techniques, reflecting the following outcomes	3	Business Relations	
Life skills		Business Relations		Frame and implement an individual action plan to improve productivity within an organisational unit	3
Discuss and explain personal financial concepts (pay deductions, bank accounts,	4	Relate own role to role of business,	2	Life skills	

concepts (pay deductions, bank accounts, interest, insurance)		customers and markets, reflecting the following outcomes			
		Explain and use procedures	6	Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	48	Total Core	78	Minimum elective credits required for qualification	12
Total for qualification	138				

No. 469

19 April 2002

National Certificate in Iron and Steel Manufacturing: NQF Level 4**Field:** Manufacturing, engineering and technology- NSB 06**Sub-field:** Manufacturing & assembly**Level:** 4**Credit:** 146**Issue date:****Review date:****Rationale for the qualification**

Why should I become qualified? How will a qualification help me?

The iron and steel manufacturing industry is characterised by sophisticated manufacturing processes operating in a competitive and challenging environment. The manufactured products have to respond to a wide variety of exacting customer requirements. In addition the industry has to respond to global competition and ongoing development of new products as a result of changing customer needs and safety, health, environmental, quality and risk management issues.

This is the third qualification in a series designed for learners who want to follow a career in iron and steel manufacturing. The series outlines a learning progression from NQF level 2 to NQF level 4 for learners learning and working in the following areas within iron and steel manufacturing: iron making, the direct reduction process, coke making, steel making and refining, liquid metal casting, steel reheating and hot working, steel cold working, steel cold processing and product coating. It reflects the skills, knowledge and understanding required to participate effectively in these manufacturing processes within the industry, whether in small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training.

For the new entrant, this qualification recognises the applied competence needed by a productive person in an iron and steel manufacturing workplace.

The qualification also forms the basis for further development.

Purpose:

What does this qualification mean?

It is intended that qualifying learners will be able to control iron and steel manufacturing processes.

The key skills, knowledge and understanding that are reflected in this qualification are those of setting up, monitoring, controlling and solving problems in the iron and steel manufacturing process.

Qualified learners will also understand how they should operate within the legislative, safety, health, environmental, quality and risk management systems that govern their workplace and how to apply the various policies and procedures related to these systems.

Qualifying in the exit level outcomes will allow learners to participate in workplace activities.

Learners will also have foundational competence in mathematics, science, reading, writing and speaking relevant to the iron and steel manufacturing industry.

Access to qualification

Open access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place

My previous learning

This qualification assumes learners have a national certificate in iron and steel manufacturing level 3.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and maths at NQF Level 3.
- Concepts of science and technology used to explain and help solve problems in an iron and steel manufacturing process
- Concepts of contributing factors in labour, business and the economy

- Role and purpose of systems which support workplace relationships, procedures, roles and responsibilities

Exit level outcomes

Qualifying learners will be able to:

Exit level outcome 1

Demonstrate an understanding of how to set up and control iron and steel manufacturing processes, and an ability to meet quality, safety, health, environmental and risk management specifications

Associated Assessment Criteria

- Processes set up to specifications
- Processes monitored and controlled according to manufacturing and customer requirements
- A clean and safe work area is maintained.
- Safety, health, environmental, quality and risk management policies and procedures are applied and adhered to
- Can respond to questions and discuss issues related to controlling iron and steel manufacturing processes relevant to the outcomes

Exit level outcome 2

Demonstrate an ability to determine quantities, mix and/or prepare materials for iron and steel manufacturing processes

Associated Assessment Criteria

- Quantities of materials are determined, mixed and/or prepared according to customer specifications
- Can respond to questions and discuss issues related to materials for iron and steel manufacturing processes relevant to the outcomes

Exit level outcome 3

Maintain and support procedures to solve a variety of problems, both familiar and unfamiliar, within iron and steel manufacturing processes and operate within familiar and new situations, taking responsibility and making decisions

Associated Assessment Criteria

- Solutions to production problems are based on a clear analysis of information gathered through diagnostic procedures.
- Procedures are modified to respond to unfamiliar problems where appropriate
- Can respond to questions and discuss issues related to familiar and unfamiliar problems arising in the manufacturing of iron and steel

- All actions related to problem solving are accurately recorded for future reference

Exit level outcome 4

Demonstrate a familiarity with process machinery operations and procedures in order to diagnose and troubleshoot machinery functioning.

Associated Assessment Criteria

- Machinery functioning and operations explained
- Production and maintenance personnel consulted
- Defect types categorised and root cause of problem established
- Equipment repair and preventive maintenance needs communicated to maintenance specialists
- Can respond to questions and discuss issues related to maintenance issues on machinery

Exit level outcome 5

Demonstrate the ability to coordinate team to run an iron and steel manufacturing process

Associated Assessment Criteria

- Tasks allocated to team members are appropriate to process requirements and level of skill of team members and are allocated in a consistent and timely manner
- Team members are coached on processes and procedures as they are applied in an iron and steel environment to ensure manufacturing targets are met and efficiencies maintained

Exit level outcome 6

Promote, implement and maintain procedures that support safety, health, the environment, quality and risk management including reporting to and coaching team members

Associated Assessment Criteria

- Safety, health, environmental quality and risk management procedures in area of responsibility are implemented and updated where required
- Team members are working in a safe and environmentally aware manner.
- Team members are coached where required
- Safety, health, environmental, quality and risk management practices are investigated systematically and suggestions for improvement made as appropriate.
- All actions related to maintaining safety, health, environmental, quality and risk management procedures are documented

Exit level outcome 7

Communicate and present information clearly and reliably and demonstrate the ability to analyse information to identify problems and determine trends

Associated Assessment Criteria

- Conditions, evidence and incidences are reported accurately in a timely manner and discussed with peers and management
- Data gathered through diagnostic procedures is examined systematically and analysis is repeated until problem is solved.
- Records are available for scrutiny and future reference

Exit level outcome 8

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes- based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment**How will I be assessed?**

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he 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 introduced if pertinent to any of the exit-level outcomes.

The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles which underpin the activities and iron and steel manufacturing processes. The assessment process should also establish how the critical outcomes have been advanced by the learning process.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in iron and steel manufacturing.

To assure the quality of the assessment process the moderation should cover one of more of the following:

1. assessor credentials
2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the *Manufacturing, Engineering and Related Services*, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of iron and steel manufacturing –with a minimum of 2 year in an iron and steel manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 4

Level 4 Fundamental		Level 4 Core		Level 4 Elective Choice of:	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Control a manufacturing process	60	Change and set tooling	16
Choice of workplace communication unit standards reflecting the following outcomes	5	Coordinate work group to produce product	8		
Maths	16	People: interacting, leading, developing			
SAQA registered maths standards at this level		Assist and coach workgroup members as needed, reflecting the following outcomes	8	Safety, Health & Environmental Quality Assurance	
The outcomes should, however, reflect the following outcomes		Business Relations		Perform role of safety representative	4
Working with information		Contribute to the maintenance of business processes	10	Business Relations	
Unit standards reflecting the following outcomes	5			Frame and implement an individual action plan to improve productivity within an organisational unit	3
Manage costs and report against budgets	5			Life skills	
				Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6
Life skills					
Explain financial planning options (savings, retirement, insurance) and develop a plan	2				
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	48	Total Core	86	Minimum elective credits required for qualification	12
Total for qualification	146				

No. 470

19 April 2002

**UNIT STANDARDS DEVELOPED FOR POWER AND TELECOMMUNICATION CABLE
MANUFACTURING**

	UNIT STD NUMBER	UNIT STANDARD TITLE	NQF LEVEL	CREDIT VALUE	CORE/ ELECTIVE
1. **	C1-L2	Identify and process waste	2	4	Core
2. **	C2-L2	Perform basic winding/rewinding of cable manufacturing materials	2	3	Core

UNIT STANDARDS DEVELOPED FOR IRON AND STEEL MANUFACTURING

	UNIT STD NUMBER	UNIT STANDARD TITLE	NQF LEVEL	CREDIT VALUE	CORE/ ELECTIVE
1. **	IS1-L2	Prepare, use and operate equipment to support a manufacturing process	2	32	Core
2. **	IS2-L2	Handle and care for prepared materials	2	4	Core
3. **	IS1-L3	Prepare and set up process equipment	3	36	Core
4. **	IS1-L4	Control a manufacturing process	4	60	Core

**UNIT STANDARDS DEVELOPED FOR METAL AND ENGINEERING
MANUFACTURING**

	UNIT STD NUMBER	UNIT STANDARD TITLE	NQF LEVEL	CREDIT VALUE	CORE/ ELECTIVE
1. **	M&E1-L2	Perform basic winding/rewinding of electro-mechanical components	2	19	Elective
2. **	M&E1-L3	Adjust and maintain production process	3	30	Core
3. **	M&E2-L3	Assemble complex components	3	25	Elective
4. **	M&E3-L3	Dismantle complex assemblies	3	20	Elective
5. **	M&E4-L3	Perform winding/rewinding of complex electro-mechanical components	3	40	Elective
6. **	M&E1-L4	Perform general grinding operations	4	14	Elective

Submission for SGB for Manufacturing and Assembly

1. National Certificate in Automotive Component Manufacturing and Assembly Level 2
2. National Certificate in Automotive Component Manufacturing and Assembly Level 3
3. National Certificate in Automotive Component Manufacturing and Assembly Level 4
4. National Certificate in Automotive Component Manufacturing and Assembly Level 5
5. National Certificate in Power and Telecommunication Cable Manufacturing Level 2
6. National Certificate in Power and Telecommunications Cable Manufacturing Level 3
7. National Certificate in Power and Telecommunication Cable Manufacturing Level 4
8. National Certificate in Iron and Steel Manufacturing - Level 2
9. National Certificate in Iron and Steel Manufacturing - Level 3
10. National Certificate in Iron and Steel Manufacturing - Level 4
11. National Certificate in Metal and Engineering Manufacturing Level 2
12. National Certificate in Metal and Engineering Manufacturing Processes Level 3
13. National Certificate in Metal and Engineering Manufacturing Processes Level 4

**UNIT STANDARDS DEVELOPED FOR AUTOMOTIVE COMPONENT
MANUFACTURING AND ASSEMBLY**

	UNIT STD NUMBER	UNIT STANDARD TITLE	NQF LEVEL	CREDIT VALUE	CORE/ ELECTIVE
1.	G1-L2	Operate and monitor machinery	2	12	Core
2.	G2-L2	Assemble components	2	12	Core
3.	G4-L2	Complete post-production and finishing operations	2	12	Core
4.	G3-L2	Use and care for tools and equipment	2	10	Core
5.	G5-L2	Perform basic welding/joining of metals	2	8	Core
6.	G6-L2	Mark off basic regular engineering shapes	2	6	Elective
7.	G7-L2	Prepare metal surfaces	2	6	Elective
8.	G8-L2	Read and interpret basic engineering drawings	2	8	Elective
9.	G1-L3	Adjust and maintain production machinery	3	30	Core
10.	G2-L3	Perform first line maintenance	3	14	Core
11.	G4-L3	Read and interpret engineering drawings	3	12	Core
12.	G3-L3	Handle and care for materials	3	12	Core
13.	G5-L3	Coat material and components	3	4	Elective
14.	G6-L3	Select, use and care for marking off/out equipment: routine shapes	3	8	Elective
15.	G1-L4	Set up production machines	4	30	Core
16.	G2-L4	Anticipate and troubleshoot machine functioning	4	16	Core
17.	G3-L4	Change and set tooling	4	16	Core
18.	G4-L4	Select, use and care for marking off/out equipment: non routine shapes	4	8	Elective
19.	G1-L5	Maintain production efficiencies	5	12	Core
20.	A1-L5	Optimise a production process	5	24	Core
21.	A3-L5	Coordinate predictive and preventive maintenance	5	12	Core
22.	G2-L5	Coordinate work group to produce product	5	8	Core
23.	A2-L5	Manage inventory	5	3	Core

UNIT STANDARDS AND SPECIFIC OUTCOMES FOR :

**AUTOMOTIVE COMPONENT MANUFACTURING AND ASSEMBLY
POWER AND TELECOMMUNICATION CABLE MANUFACTURING
IRON AND STEEL MANUFACTURING
METAL ENGINEERING MANUFACTURING**

NQF Level 2

1. Title: Operate and monitor machinery

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Operate and monitor machinery
- Specific outcomes 3: Apply quality checks on materials, components and product
- Specific outcomes 4: Recognise and report changes and/or malfunctions while operating
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 6: Record monitoring data on shift
- Specific outcomes 7: Work and participate in team processes

2. Title: Assemble components

- Specific outcomes 1: Perform finishing activities on assembled product
- Specific outcomes 2: Apply quality checks on materials, components and product
- Specific outcomes 3: Report out of compliance or unsafe conditions while working
- Specific outcomes 4: Work safely with due care for self, fellow workers, equipment, materials and the environment

3. Title: Complete post-production and finishing operations

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Apply finishing procedures to product
- Specific outcomes 3: Carry out post-production operations
- Specific outcomes 4: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 5: Report all occurrences on shift
- Specific outcomes 6: Dispatch product to customer or down line process
- Specific outcomes 7: Work and participate in team processes

4. Title: Use and care for tools and equipment

- Specific outcomes 1: Lift, load and unload materials, components, products and equipment
- Specific outcomes 2: Select and use appropriate tools
- Specific outcomes 3: Clean and store tools and equipment
- Specific outcomes 4: Check on power supply sources to equipment
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 6: Discuss and report incidents and problems related to tools and equipment during the production process.

5. Title: Perform basic welding/joining of metals

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Weld/join metals
- Specific outcomes 3: Apply quality checks on completed weld/joint
- Specific outcomes 4: Perform finishing activities
- Specific outcomes 5: Report out of compliance or unsafe conditions while working

6. Title: Mark off basic regular engineering shapes

- Specific outcomes 1: Plan and prepare materials and equipment for marking off
- Specific outcomes 2: Mark off materials using templates
- Specific outcomes 3: Apply quality checks on completed work
- Specific outcomes 4: Care for and store marking off equipment
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment

7. Title: Prepare metal surfaces

- Specific outcomes 1: Demonstrate an understanding of basic engineering drawings, sketches and material lists
- Specific outcomes 2: Interpret basic engineering drawings and sketches
- Specific outcomes 3: Select components from engineering drawings

8. Title: Reading and interpreting basic engineering drawings

- Specific outcomes 1: Demonstrate an understanding of basic engineering drawings, sketches and material lists
- Specific outcomes 2: Interpret basic engineering drawings and sketches
- Specific outcomes 3: Select components from engineering drawings

9. Title: Identify and process waste

- Specific outcomes 1: Demonstrate an understanding of water, effluent, waste, solids and gas handling and treatment methods
- Specific outcomes 2: Identify and separate waste
- Specific outcomes 3: Process and dispose of waste
- Specific outcomes 4: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 5: Recognise and report environmentally damaging practices
- Specific outcomes 6: Discuss and explain incidents and problems related to waste disposal

10. Title: Performing basic winding/rewinding of cable manufacturing materials

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Wind/rewind wires/tapes
- Specific outcomes 3: Apply quality checks on materials
- Specific outcomes 4: Report out of compliance or unsafe conditions while working
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 6: Work and participate in team processes

11. Title: Prepare, use and operate equipment to support a manufacturing process

- Specific outcomes 1: Plan to perform support activities and functions
- Specific outcomes 2: Prepare consumables and equipment for use
- Specific outcomes 3: Operate manufacturing equipment
- Specific outcomes 4: Liaise with process control personnel and maintenance specialist
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment

12. Title: Handling and storing prepared materials during and after the production process

- Specific outcomes 1: Check material stock levels for production
- Specific outcomes 2: Check and layout materials for use in production process
- Specific outcomes 3: Store materials
- Specific outcomes 4: Complete all required documentation
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 6: Discuss and explain incidents and problems related to materials handling

13. Title: Performing basic winding/rewinding of electro-mechanical components .

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Wind/rewind components
- Specific outcomes 3: Apply quality checks on materials and components
- Specific outcomes 4: Report out of compliance or unsafe conditions while working
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 6: Work and participate in team processes

UNIT STANDARDS AND SPECIFIC OUTCOMES FOR AUTOMOTIVE COMPONENT MANUFACTURING AND ASSEMBLY**IRON AND STEEL MANUFACTURING****METAL AND ENGINEERING MANUFACTURING****NQF Level 3****1. Title: Adjust and maintain production machinery**

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Monitor and adjust machinery
- Specific outcomes 3: Perform finishing activities on product produced
- Specific outcomes 4: Perform quality tests and inspections on materials, components and product
- Specific outcomes 5: Recognise and report changes and/or malfunctions while operating
- Specific outcomes 6: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 7: Document all occurrences on shift
- Specific outcomes 8: Discuss and explain incidents and problems related to the process, the materials

2. Title: Perform first line maintenance

- Specific outcomes 1: Observe equipment operation during normal operating cycle
- Specific outcomes 2: Perform routine first line maintenance
- Specific outcomes 3: Report on work done
- Specific outcomes 4: Work safely with due regard for self and fellow workers

3. Title: Read and interpret engineering drawings

- Specific outcomes 1: Demonstrate an understanding of engineering drawings, sketches and material lists
- Specific outcomes 2: Interpret engineering drawings, sketches and material lists
- Specific outcomes 3: Transfer interpreted measurements and dimensions from drawings to work piece

4. Title: Handle and care for materials

- Specific outcomes 1: Check material requirements for production
- Specific outcomes 2: Plan and arrange transport of materials to work station
- Specific outcomes 3: Layout materials for use in production process
- Specific outcomes 4: Store materials
- Specific outcomes 5: Complete all required documentation
- Specific outcomes 6: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 7: Discuss and explain incidents and problems related to materials handling

5. Title: Coat material and components

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Coat materials and components
- Specific outcomes 3: Apply quality control procedures on coated materials and components
- Specific outcomes 4: Recognise and report changes and/or malfunctions while operating
- Specific outcomes 5: Perform finishing activities
- Specific outcomes 6: Determine output figures and material usage

6. Title: Select, use and care for marking off/out equipment: routine shapes

- Specific outcomes 1: Plan and prepare materials and equipment for marking off
- Specific outcomes 2: Mark off materials using templates
- Specific outcomes 3: Apply quality checks on completed work
- Specific outcomes 4: Care for and store marking off equipment
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment

7. Title: Starting up, monitoring, adjusting and shutting down a production line

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Monitor and adjust process
- Specific outcomes 3: Perform finishing activities on product produced
- Specific outcomes 4: Perform quality tests and inspections on materials, components and product
- Specific outcomes 5: Recognise and report changes and/or malfunctions while operating
- Specific outcomes 6: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 7: Document all occurrences on shift

8 Title: Assemble complex components

- Specific outcomes 1: Plan and prepare for assembly
- Specific outcomes 2: Assemble components
- Specific outcomes 3: Perform finishing activities on assembled product
- Specific outcomes 4: Perform quality tests and inspections on materials, components and product
- Specific outcomes 5: Report out of compliance or unsafe conditions while working
- Specific outcomes 6: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 7: Document all occurrences on shift
- Specific outcomes 8: Discuss and explain incidents and problems related to the assembly process, the materials and the products

9. Title: Dismantle complex assemblies

- Specific outcomes 1: Plan and prepare for dismantling activity
- Specific outcomes 2: Dismantle components
- Specific outcomes 3: Inspect and clean dismantled components
- Specific outcomes 4: Report out of compliance or unsafe conditions while working
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 6: Document occurrences on shift
- Specific outcomes 7: Discuss and explain incidents and problems related to the dismantling process, equipment and the components

10. Title: Perform winding/rewinding of complex electro-mechanical components

- Specific outcomes 1: Prepare for work activity
- Specific outcomes 2: Wind/rewind components
- Specific outcomes 3: Apply quality checks on windings
- Specific outcomes 4: Perform finishing activities
- Specific outcomes 5: Report out of compliance or unsafe conditions while working
- Specific outcomes 6: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 7: Work and participate in team processes

11. Title: Preparing and setting up process equipment for a manufacturing process

- Specific outcomes 1: Plan set up process
- Specific outcomes 2: Prepare and set up equipment for use
- Specific outcomes 3: Monitor equipment indicators
- Specific outcomes 4: Liaise with process control personnel and maintenance specialists
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 6: Record all activities and results

**UNIT STANDARDS DEVELOPED FOR AUTOMOTIVE COMPONENT
MANUFACTURING AND ASSEMBLY
IRON AND STEELMANUFACTURING
METAL AND ENGINEERING MANUFACTURING****NQF Level 4****1. Title: Set up production machines**

- Specific outcomes 1: Plan work activity
- Specific outcomes 2: Set up machinery
- Specific outcomes 3: Monitor equipment indicators
- Specific outcomes 4: Inspect product
- Specific outcomes 5: Correct product or process problems
- Specific outcomes 6: Complete changeover process
- Specific outcomes 7: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 8: Document all activities and results

2. Title: Anticipate and troubleshoot machine functioning

- Specific outcomes 1: Monitor equipment indicators
- Specific outcomes 2: Consult with production personnel and maintenance specialists regarding equipment operation
- Specific outcomes 3: Gather and analyse information to troubleshoot equipment problems
- Specific outcomes 4: Communicate equipment repair needs and preventive maintenance needs to maintenance specialists
- Specific outcomes 5: Suggest ways of improving the functioning of equipment and the process
- Specific outcomes 6: Document all relevant activities

3. Title: Change and set tooling

- Specific outcomes 1: Plan and prepare for tooling changes
- Specific outcomes 2: Change and set up tooling
- Specific outcomes 3: Document all activities
- Specific outcomes 4: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 5: Discuss and explain issues related to the setting process and product requirements.

4 Title: Select, use and care for marking off/out equipment non routine shapes

- Specific outcomes 1: Plan and prepare materials and equipment for marking off
- Specific outcomes 2: Mark off materials using templates
- Specific outcomes 3: Apply quality checks on completed work
- Specific outcomes 4: Care for and store marking off equipment
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment

5. Title: Control a manufacturing process

- Specific outcomes 1: Plan set up process
- Specific outcomes 2: Prepare and set up equipment for use
- Specific outcomes 3: Monitor equipment indicators
- Specific outcomes 4: Liaise with process control personnel and maintenance specialists
- Specific outcomes 5: Work safely with due care for self, fellow workers, equipment, materials and the environment
- Specific outcomes 6: Record all activities and results
- Specific outcomes 7: Discuss and explain information related to preparing and setting up of manufacturing equipment and the shift changeover procedure

6. Title: Perform general grinding operations

- Specific outcomes 1: Determine job requirements
- Specific outcomes 2: Prepare grinding machine for operation
- Specific outcomes 3: Perform grinding operations on components
- Specific outcomes 4: Measure and check components
- Specific outcomes 5: Perform finishing activities
- Specific outcomes 6: Document work done and results achieved
- Specific outcomes 7: Work safely with due care for self, fellow workers, equipment, materials and the environment

UNIT STANDARDS AND SPECIFIC OUTCOMES FOR AUTOMOTIVE COMPONENT MANUFACTURING AND ASSEMBLY**NQF Level 5****1. Title: Maintain production efficiencies**

- Specific outcomes 1: Observe production process
- Specific outcomes 2: Share and discuss information and resolve issues which impact on quality and output
- Specific outcomes 3: Identify and report performance and training issues affecting quality
- Specific outcomes 4: Record process output and trends
- Specific outcomes 5: Suggest or perform corrective actions to maintain quality and output

2. Title: Optimise a production process

- Specific outcomes 1: Analyse data to identify opportunities for improvement
- Specific outcomes 2: Generate and test options to achieve improvement
- Specific outcomes 3: Generate plan for optimisation
- Specific outcomes 4: Make recommendations in a way that draws support for process improvement
- Specific outcomes 5: Implement improved recommendations
- Specific outcomes 6: Ensure all stakeholders understand their role in process improvement
- Specific outcomes 7: Adjust and update operating procedures
- Specific outcomes 8: Explain and discuss optimising issues with workgroup and other partners
- Specific outcomes 9: Range: Other partners includes suppliers of materials and equipment, experts, customers
- Specific outcomes 10: Understand the impact and the interrelationship of changes on production quality and output and production costs

3. Title: Coordinate predictive and preventive maintenance

- Specific outcomes 1: Consult with maintenance and production personnel to schedule repair and maintenance requirements
- Specific outcomes 2: Develop a maintenance schedule
- Specific outcomes 3: Document outcomes of scheduled maintenance
- Specific outcomes 4: Inform production personnel about the benefits of predictive and preventive maintenance

4. Title: Coordinate work group to produce product

- Specific outcomes 1: Plan work activities
- Specific outcomes 2: Set team goals
- Specific outcomes 3: Allocate job assignments
- Specific outcomes 4: Coordinate work flow with team members and other work groups
- Specific outcomes 5: Coach team members
- Specific outcomes 6: Document all activities

5. Title: Manage inventory

- Specific outcomes 1: Develop plan for location of materials during production process
- Specific outcomes 2: Station materials for production flow
- Specific outcomes 3: Document materials movement and inventory count
- Specific outcomes 4: Establish lot sizes and reorder points
- Specific outcomes 5: Conduct on-site inventory
- Specific outcomes 6: Change logistics and update inventory to respond to production and engineering changes

No. 471

19 April 2002

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

Telecommunications

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

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification and unit standard upon which qualifications are based. The full qualification and unit standards can be accessed via the SAQA web-site at www.saga.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, 659 Pienaar street, Brooklyn, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 14 May 2002***. All correspondence should be marked **Standards Setting – SGB for Telecommunications** 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 – 482 0907



SAMUEL B.A. ISAACS
EXECUTIVE OFFICER

National Certificate in Power and Telecommunication Cable Manufacturing: NQF Level 4

Field: Manufacturing, engineering and technology- NSB 06

Sub-field: Manufacturing & assembly

Level: 4

Credit: 142

Issue date:

Review date:

Rationale of the qualification:

Why should I become qualified? How will a qualification help me?

The cable manufacturing industry is characterised by diverse manufacturing processes operating in a globally competitive and challenging environment.

The manufactured products have to respond to a wide variety of exacting customer and consumer requirements.

This is the third qualification in a series for learners who want to follow a career in cable manufacturing processes. This qualification aims to further develop people who have worked on manufacturing processes for a number of years. It will enable them to set up complex machinery and processes and perform troubleshooting on potential machine malfunctioning.

This qualification reflects the skills, knowledge and understanding required to participate effectively in the cable manufacturing industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training.

The qualification also forms the basis for further development.

Purpose of qualification

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to achieve competence in setting up of complex machines/processes.

This qualification recognises the skills, knowledge and values acquired by learners involved in setting up manufacturing processes and performing troubleshooting on potential machine malfunctions

The main skills that are recognised in this qualification are

- Setting up production machinery
- Anticipating and troubleshooting machine malfunctioning

Qualified learners will also understand:

- How to read and interpret graphical presentations of information
- Analysis of information
- Principles and concepts which underpin complex manufacturing processes
- Planning of own work

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts. They will also be able to maintain and support the various policies and procedures related to the safety, health, environment and quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in optimising and maintaining the efficiencies of the production process.

Access to qualification

Open access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place

My previous learning

This qualification assumes learners have a national certificate in cable manufacturing level 3.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and maths beyond basic literacy and numeracy
- Concepts of science and technology related to material, machinery and equipment in use in the engineering manufacturing process
- Concepts of organising factors in labour, business and the economy

- Role and purpose of procedures related to workplace relationships, roles and responsibilities

Exit level outcomes and Assessment Criteria

On what performance will I be assessed?

Exit level outcome 1

Demonstrate an understanding of and an ability to set up a range of production machines

Associated Assessment Criteria

- Own work planned and scheduled
- Product produced according to company specifications
- Adjustments to machinery made appropriately based on information gathered from the process

Exit level outcome 2

Demonstrate an understanding of and an ability to troubleshoot potential machinery malfunctions

Associated Assessment Criteria

- Gathered information is analysed
- Machine downtime is minimised
- Improvements to machinery functioning are made and followed up on.
- Production and maintenance personnel consulted
- Defect types categorised and root cause of problem established
- Equipment repair and preventive maintenance needs communicated to maintenance specialists
- Can respond to questions and discuss issues related to maintenance issues on machinery

Exit level outcome 3

Maintain and support procedures to solve a variety of problems, both familiar and unfamiliar, within cable manufacturing process and operate within familiar and new situations, taking responsibility and making decisions

Associated Assessment Criteria

- Solutions to production problems are based on a clear analysis of information gathered through diagnostic procedures.
- Procedures are modified to respond to unfamiliar problems where appropriate
- Can respond to questions and discuss issues related to familiar and unfamiliar problems arising in the manufacturing of cables and cable components
- All actions related to problem solving are accurately recorded for future reference

Exit level outcome 4

Communicate across functional boundaries and demonstrate the ability to analyse information to identify problems and determine trends

Associated Assessment Criteria

- Conditions, evidence and incidences are reported accurately in a timely manner and discussed with peers and management
- Data gathered through diagnostic procedures is examined systematically and analysis is repeated until problem is solved.
- Analysed information is presented in appropriate formats

Exit level outcome 5

Promote, implement and maintain procedures that support safety, health and the environment, including reporting to and coaching team members

Associated Assessment Criteria

- Safety, health and environmental procedures in area of responsibility are implemented and updated where required
- Team members are working in a safe and environmentally aware manner.
- Team members are coached where required
- All actions related to maintaining safety, health and environmental procedures are documented

Exit level outcome 6

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes- based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment**How will I be assessed?**

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or 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 introduced if pertinent to any of the exit-level outcomes.

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

The qualification and the standards have been

written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do.

Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should the learner not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit his/her needs.

Criteria for the registration of assessors

How will the learner know that the assessor will not prejudge or prejudice him/her?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in cable manufacturing manufacturing.

To assure the quality of the assessment process the moderation should cover one of more of the following:

1. assessor credentials

2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of cable manufacturing or engineering – with a minimum of 1 year in a cable manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 4

Level 4 Fundamental		Level 4 Core		Level 4 Elective Choice of:	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Set up production machines	30	Maintain production efficiencies	12
Choice of workplace communication unit standards reflecting the following outcomes	5	Anticipate and troubleshoot machine functioning	16		
Maths	16	Change and set tooling	16		
SAQA registered maths standards at this level		Safety, Health & Environmental Quality Assurance		Safety, Health & Environmental Quality Assurance	
The outcomes should, however, reflect the following outcomes		Maintain the discipline of the safety system, reflecting the following outcomes	4	Perform role of safety representative	4
Working with information		Maintain the quality system and procedures	5	Business Relations	
Unit standards reflecting the following outcomes	5	People: interacting, leading, developing		Frame and implement an individual action plan to improve productivity within an organisational unit	3
		Assist and coach workgroup members as needed, reflecting the following outcomes	8	Life skills	
		Business Relations		Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6
		Contribute to the maintenance of business processes	10	Explain financial planning options (savings, retirement, insurance) and develop a plan	2
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	41	Total Core	89	Minimum elective credits required for qualification	12
Total for qualification	142				

No. 472

19 April 2002

National Certificate in Power and Telecommunications Cable Manufacturing: NQF Level 3**Field:** Manufacturing, engineering and technology- NSB 06**Sub-field:** Manufacturing & assembly**Level:** 3**Credit:** 144**Issue date:****Review date:****Rationale of the qualification**

Why should I become qualified? How will a qualification help me?

The cable manufacturing industry is characterised by diverse manufacturing processes operating in a globally competitive and challenging environment.

The manufactured products have to respond to a wide variety of exacting customer and consumer requirements.

This higher level qualification enables learners to further their careers in cable manufacturing processes including the assembly of products

This qualification reflects the skills, knowledge and understanding required to participate effectively in the cable manufacturing industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training.

The qualification also forms the basis for further development.

Purpose of qualification

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to achieve competence in manufacturing processes.

This qualification recognises the skills, knowledge and values acquired by learners involved in manufacturing of products in the cable manufacturing industry

The main skills that are recognised in this qualification are

- Adjusting and maintaining the production process
- Handling and caring for materials
- Performing first line maintenance

Qualified learners will also understand:

- Manufacturing processes
- Maintaining the process
- Company procedures
- Basic maintenance
- Basic quality control
- SHE requirements

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to scientific and technological principles and concepts. They will also be able to maintain and support the various policies and procedures related to the safety, health, environment and quality systems that govern their workplace.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes.

Access to qualification

Open access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place

My previous learning

This qualification assumes learners have a national certificate in cable manufacturing level 2.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and maths beyond basic literacy and numeracy
- Concepts of science and technology related to material, machinery and equipment in use in the cable manufacturing process
- Concepts of organising factors in labour, business and the economy
- Role and purpose of procedures related to workplace relationships, roles and responsibilities

Exit level outcomes and Assessment Criteria:

On what performance will I be assessed?

Exit level outcome 1

Demonstrate an understanding of how to adjust and maintain a cable manufacturing machinery to ensure the process remains within defined safety and quality parameters.

Associated Assessment Criteria

- Identify and use materials, tools and equipment
- Produce product according to company procedures
- Adhere to required specifications and standards
- Adjust and maintain the production process as required
- Materials handled and cared for

- Work undertaken in a safe and environmentally aware manner

Exit level outcome 2

Perform first line maintenance

Associated Assessment Criteria

- Comply with company maintenance procedure
- Select and use correct tools and equipment
- Identify and report defects on machinery and equipment

Exit level outcome 3

Apply quality control procedures

Associated Assessment Criteria

- Ensure product/component complies with specifications
- Report and record non-compliances
- Select and use appropriate measuring instruments

Exit level outcome 4

Apply safety, health and environmental protection procedures

Associated Assessment Criteria

- Comply with procedures to avoid damage and incidents
- Identify and report unsafe conditions (including potential health and environmental hazards)
- Select and use appropriate personal protective equipment

Exit level outcome 5

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes- based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment

How will I be assessed?

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or 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 introduced if pertinent to any of the exit-level outcomes.

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

The qualification and the standards have been written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do.

Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should the learner not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit his/her needs.

Criteria for the registration of assessors

How will the learner know that the assessor will not prejudge or prejudice him/her?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in cable manufacturing.

To assure the quality of the assessment process the moderation should cover one of more of the following:

1. assessor credentials
2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of manufacturing or engineering— with a minimum of 1 year in a cable manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 3

Level 3 Fundamental		Level 3 Core		Level 3 Elective Choice of:	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Adjust and maintain production machinery	30	Conduct simple tests (line function)	3
Choice of workplace communication unit standards reflecting the following outcomes	5	Perform first line maintenance	14	Operate a lift truck	6
Maths		Materials		Operate a crane	
SAQA registered maths standards at this level	16	Handle and care for materials	12	Safety, Health & Environmental Quality Assurance	
The outcomes should, however, reflect the following outcomes		Safety, Health & Environmental Quality Assurance		Perform role of safety representative	4
Working with information		Explain and apply safety procedures, reflecting the following outcomes >>	6	Provide basic first aid	4
Analyse information, reflecting the following outcomes	5	Perform quality procedures, reflecting the following outcomes	8	Understanding and dealing with HIV / Aids personally and in the workplace	3
Keyboard skills to capture and record information	3	People: interacting, leading, developing		Business Relations	
Life skills		Contribute to work group performance	3	Frame and implement an individual action plan to improve productivity within an organisational unit	3
Discuss and explain personal financial concepts (pay deductions, bank accounts, interest, insurance)	4	Develop learning strategies and techniques, reflecting the following outcomes	3	Life skills	
		Business Relations		Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6
		Relate own role to role of business,	2		

		customers and markets, reflecting the following outcomes			
		Explain and use procedures	6		
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	48	Total Core	84	Minimum elective credits required for qualification	12
Total for qualification	144				

No. 473

19 April 2002

National Certificate in Power and Telecommunication Cable Manufacturing: NQF Level 2

Field: Manufacturing, engineering and technology- NSB 06
Sub-field: Manufacturing & assembly
Level: 2
Credit: 128
Issue date:
Review date:

Rationale for the qualification

Why should I become qualified? How will a qualification help me?

The cable manufacturing industry is characterised by diverse manufacturing processes operating in a globally competitive and challenging environment.

The manufactured products have to respond to a wide variety of exacting customer and consumer requirements.

This first qualification forms a basis for learners who want to follow a career in the cable manufacturing industry. This qualification reflects the skills, knowledge and understanding required to participate effectively in the cable manufacturing industry, whether in micro, small, medium or large operations.

For those who have been in the workplace for a long time, this qualification represents part of the RPL process to acknowledge workplace skills acquired without the benefit of formal education or training.

For the new entrant, this qualification recognises the applied competence needed by a productive person in a structured workplace.

The qualification also forms the basis for further development.

Purpose:

What does this qualification mean?

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to achieve competence in the operation of machines in the cable manufacturing industry

This qualification recognises the skills, knowledge and values acquired by learners involved in operating and monitoring manufacturing machinery and working in the cable manufacturing industry using such processes.

The main skills that are recognised in this qualification are operating and monitoring machines and recognising and responding to changes in the manufacturing of cables and cable components. This capability requires an understanding of basic quality requirements and monitoring material flow. Hand skills play a role in this qualification.

Qualified learners will also understand:

- the basics of how a business functions
- their role in the business, i.e. in production and related activities
- how they are affected by legislation, regulations, agreements and policies related to their particular work environment.

With this understanding learners will be able to participate in workplace activities.

Qualifying learners will also be able to relate what they see and experience to basic scientific and technological principles and concepts.

What learners achieve in this qualification will also serve as a basis for further learning where they will engage more directly in the production processes.

Access to qualification

Open access

How can I acquire the qualification?

This qualification series recognises skills, knowledge and values relevant to a workplace. It is designed for learners who:

- Have attended courses and then apply the knowledge gained to activities in the workplace
- Are already workers and have acquired the skills and knowledge without attending formal courses
- Are part of a learnership programme which integrates structured learning and work experience.

Learning assumed to be in place

My previous learning

This qualification assumes learners have a General Education and Training Certificate at NQF level 1, or alternatively, ABET qualifications.

If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Literacy and numeracy

- Basic concepts of science and technology

Exit Level Outcomes and Assessment Criteria:

On what performance will I be assessed?

Exit level outcome 1

Contribute to the main manufacturing process

Associated Assessment Criteria

- Machinery operated correctly
- Components manufactured to specifications
- Basic safety, health and environmental protection procedures adhered to.
- Quality standards met
- Process and product monitored

Exit level outcome 2

Apply quality assurance procedures

Associated Assessment Criteria

- Basic measuring instruments, e.g. go/no go gauges used.
- Basic checking and sampling activities undertaken according to specifications
- Defects recognised and responded to accordingly

Exit level outcome 3

Gather and communicate information

Associated Assessment Criteria

- Production outputs reported
- Downtime recorded and reported
- Information is gathered from various sources and used in relevant situations

Exit level outcome 4

Understand role in work situation

Associated Assessment Criteria

- Job requirements are explained
- Own function in terms of the production chain is explained
- Role in work team is understood and explained

Exit level outcome 5

Communicate with peers and members of supervisory/management levels by demonstrating the ability to summarise information and express opinions on given information in spoken or written form

Associated Assessment Criteria

- Communication is regular and ongoing
- Information is clear and accurate and conveyed in a timely manner
- Relationships with peers and supervisory./management levels are established and functioning

Exit level outcome 6

Demonstrate an understanding of options for further learning in this or a related field of learning and preparation requirements for such learning

Associated Assessment Criteria

- Options are explained
- Preparation requirements are explained.
- Learning plan is developed

International comparability

This qualification was compared to other, similar outcomes-based qualifications, certifications or skills standards in the United Kingdom, New Zealand and the United States. Its outcomes correspond.

Integrated assessment**How will I be assessed?**

The integrated assessment must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions)
- Asking questions and initiating short discussions to test understanding
- Looking at records and reports in the portfolio and reviewing previous assessments

The learner may choose in which language s/he wants to be assessed. This should be established as part of a process or 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 introduced if pertinent to any of the exit-level outcomes.

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

written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know and can do.

Where courses are provided for learners, institutions can use the unit standards and this qualification to assess my level of learning.

Should the learner not be able to achieve the outcomes, the institution can then use the standards and the qualification to determine a specific learning programme to suit his/her needs.

Criteria for the registration of assessors

How will the learner know that the assessor will not prejudice or prejudice him/her?

Assessors will have to be qualified as assessors and accredited by an ETQA. Accredited assessors should be accredited for the particular sub-field or have a recognised technical qualification in this sub-field. They should also be familiar with the particular process and the type of product being made.

Recognition of prior learning

How will learning I already have be included in this qualification?

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

Articulation possibilities

How can this qualification help me achieve other goals?

The 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 purpose of RPL

Moderation options

How will I know that my assessment is done at the same standard for everyone?

Moderators for the qualification should be qualified and accredited with an appropriate Education, Training Quality Assurance Body (ETQA) and have a qualification in manufacturing, preferably in cable manufacturing manufacturing.

To assure the quality of the assessment process the moderation should cover one or more of the following:

1. assessor credentials
2. the assessment instrument
3. the assessment process (including preparation and post-assessment feedback)

Where assessment and moderation are taking place in sectors other than the Manufacturing, Engineering and Related Services, assessment and moderation should be in terms of a Memorandum of Understanding negotiated with the MERS ETQA

Criteria for registration of assessors

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in the field of cable manufacturing or engineering – with a minimum of 1 year in a cable manufacturing environment. The subject matter experience 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 the 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 the MERS ETQA or any other relevant ETQA
5. Any other criteria required by the MERS ETQA or any other relevant ETQA

NQF Level 2

Level 2 Fundamental		Level 2 Core		Level 2 Elective choice of	
Communication		Manufacturing		Manufacturing	
SAQA registered communication standards at this level	15	Operate and monitor machinery	12	Perform basic winding/rewinding of cable manufacturing materials	3
Choice of workplace communication unit standards reflecting the following outcomes	5	Complete post production and finishing operations	12	Safety, Health & Environmental Quality Assurance	
Maths	16	Use and care for tools and equipment	10	Basic first aid	4
SAQA registered maths standards at this level		Identify and process waste	4	Basic fire fighting	4
The outcomes should, however, reflect the following outcomes		Perform basic welding/joining of metals	8	Dealing with safety, health and environmental emergencies in the workplace	4
Working with information		Safety, Health & Environmental Quality Assurance		Business Relations	
Using information and technology, reflecting the following outcomes	5	Maintain a safe and productive work area, reflecting the following outcomes	8	Frame and implement an individual action plan to improve productivity within an organisational unit	3
Life Skills		People: interacting, leading, developing			
Manage personal finance	4	Working in groups, reflecting the following outcomes	4		
Understanding and dealing with HIV / Aids personally and in the workplace	3	Business Relations			
Develop a personal portfolio and a learning plan and prepare for assessment, reflecting the following outcomes	6	Explain my role within business, my rights, contributions and responsibilities, reflecting the following outcomes	4		
				Other standards or additional learning related to the purpose of the qualification	
Total Fundamental	54	Total Core	62	Minimum elective credits required for qualification	12
Total for qualification	128				

No. 474

19 April 2002

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In order to proceed with the recognition of Standards Generating Bodies in terms of Government Regulations 19(1)(c) and 22(2) of 28 March 1998, National Standards Body 09, Health Sciences and Social Services invites public comment with respect to *the acceptability of the nominees and the representativeness of the key education and training stakeholder interest groups* listed as an SGB applicant below.

In addition, the NSB invite submissions from interested parties wishing to serve on such an SGB. Interested parties should take note of the section on SGB Information below.

All nominations/ applications should be accompanied by curricula vitae.

More information regarding this application may be obtained on the SAQA website or from the SAQA offices.

Comment should reach the NSB at the address below **by not later than 14 May 2002 2002**. All correspondence should be marked **SGB Formation – NSB 09, SGB for Phlebotomy Technicians** and be 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 - 482 0992

SGB INFORMATION

As a necessary step in the development and implementation of the National Qualifications Framework, The National Standards Bodies are briefed [regulation 19(1)(c) of 28 March 1998] to recognise or establish Standards Generating Bodies (SGBs).

SGBs shall:

- a. generate standards and qualifications in accordance with the Authority requirements in identified sub-fields and levels;
- b. update and review standards;
- c. recommend standards and qualifications to National Standards Bodies;
- d. recommend criteria for the registration of assessors and moderators or moderating bodies; and
- e. perform such other functions as may from time-to-time be delegated by its National Standards Body.

Any bodies wishing to nominate representatives, make application to serve on, or make any other submission with regard to the above SGB should note the following information.

SGBs should be composed of organisations, which shall be key education and training stakeholder interest groups and experts in the sub-field. The NSB, when making its final decisions will have due regard for, among other things, *'the need for representativeness and equity, redress and relevant expertise in terms of the work of the SGBs.'*

Organisations proposing to nominate persons to SGBs should be sensitive to the need for **equity** and **redress**, and shall nominate persons who-

- (a) will be able to consider issues of productivity, fairness, public interest and international comparability as related to education and training in the sub-field;
 - (b) enjoy credibility in the sub-field in question, who enjoy respect; have the necessary expertise and experience in the sub-field and have the support or backing of the nominating body;
 - (c) are able to advocate and mediate the needs and interests of all levels within the sub-field covered by the Standards Generating Body;
 - (d) are able to exercise critical judgement at a high level; and
 - (e) are committed to a communication process between the Standards Generating Body, the National Standards Body and the Constituency.
-

PUBLIC NOTICE BY NSB 09, HEALTH SCIENCES AND SOCIAL SERVICES, OF AN APPLICATION TO REGISTER AN SGB FOR PHLEBOTOMY TECHNICIANS

NSB 09 has received an application to recognise and register an SGB for Phlebotomy Technicians for NQF levels 4 – 5.

Proposed Brief of the SGB

1. Develop learning pathways for potential qualifications and unit standards in the area of phlebotomy technicians from NQF level 4 through to NQF level 5 [Regulation 24 (1)(a)].
2. Generate qualifications and standards in the areas of phlebotomy technicians in terms of requirements of relevant legislation and the establishment of best practices and ethics across the working environment. These will include:
 - Certificate for Phlebotomy Technicians at NQF level 4
 - Certificate for Phlebotomy Technicians at NQF level 5 [Regulation 24 (1)(a)].
3. Ensure that practising Phlebotomy Technicians are able to fulfil the requirements for registration with the relevant Professional Councils [Regulation 24 (1)(e)].
4. Recommend qualifications and standards generated under 1 and 2 above to the NSB [Regulation 24 (1)(c)].
5. Recommend criteria for the registration of assessors and moderators or moderating bodies [Regulation 24 (1)(d)].
6. Liaise with other NSBs and SGBs – within and outside NSB 09 – which have vested interests in the subject of phlebotomy technicians [Regulation 24 (1)(e)].
7. Perform such other functions as may from time to time be delegated by NSB 09: Health Sciences and Social Services [Regulation 24 (1)(e)].

PROPOSED COMPOSITION OF THE SGB

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION / EXPERIENCE
Coveney, J	Lancet Laboratories, Gauteng	Lancet Laboratories	Reg General Nurse and Midwife; 16 years clinical nursing; 13 years phlebotomy clinical and training experience
Cupido, G I	National Health Laboratory Service (NHLS), Worcester Laboratory	NHLS	Nat Dip Med Tech (Clinical Pathology); 16 years' clinical; 12 years' administration; 2 years' trainer; 2 years' examiner for medical technologists & technicians
De Benedictis, P	Western Province Blood Transfusion Services Cape Town	Western Province Blood Transfusion Services	Nat Dip Medical Tech - Blood Transfusion; 41 years' blood transfusion service including training, lecturing, examining, moderating & management
Lötter, J.L. (Convenor)	Pathcare - Drs Dietrich, Street, Penman, Senekal Partners, Cape Town	PathCare Laboratories.	Dip General Nursing; 4 years clinical nursing; 15 years phlebotomy experience; 13 years training; 6 years management
Mackay, N	SANBS - East Coast Region	South African National Blood Service (SANBS)	Dip General Nursing; 15 years clinical ; 12 years blood bank phlebotomy; 4 years' training experience
Maseko, S	National Health Laboratory Service (NHLS)	NHLS	B.A. Cur; Post Grad Dip Business Admin; 4 years clinical; 18 years nursing tutor; 1 year phlebotomy supervisor
Matebane, M H	NHLS	New Johannesburg Hospital	Reg General Nurse & Midwife; 2 Years clinical nursing & 6 years' phlebotomist experience
Mohapi, M.J.	M.L. Sultan Technikon, Durban (Convenor Technikon)	M.L. Sultan Technikon (Convenor Technikon)	Dip General Nursing; B Tech Clinical Technology; M Med Sc; 1 year clinical nursing; 7 years clinical technology experience; 7 years technikon lecturing
Motshidi, M	Tshiamiso Development and Consultancy	Tshiamiso Development and Consultancy	B.A.Cur. (Com Health & Educ); 10 years training experiencedevelopment; Life Skills Management (HIV / AIDS)
Nkalitshana, V	National Education Health Allied Workers Union (NEHAWU)	NEHAWU	Dip Nursing; 11 years clinical experience; 5 years as union negotiator.
Rautenbach, T.A.	Ampath - Drs Du Buisson, Bruinette & Kramer Inc., Pretoria	Ampath Laboratories	B.A.Cur; 19 years phlebotomy; 6 years' training; 10 years' admin

No. 475

19 April 2002

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In order to proceed with the recognition of Standards Generating Bodies in terms of Government Regulations 19(1)(c) and 22(2) of 28 March 1998, National Standards Body 09, Health Sciences and Social Services invites public comment with respect to *the acceptability of the nominees and the representativeness of the key education and training stakeholder interest groups* listed as an SGB applicant below.

In addition, the NSB invite submissions from interested parties wishing to serve on such an SGB. Interested parties should take note of the section on SGB Information below.

All nominations/ applications should be accompanied by curricula vitae.

More information regarding this application may be obtained on the SAQA website or from the SAQA offices.

Comment should reach the NSB at the address below **by not later than 14 May 2002 2002**. All correspondence should be marked **SGB Formation – NSB 09, SGB for Medical Laboratory Assistants** and be 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 - 482 0992

SGB INFORMATION

As a necessary step in the development and implementation of the National Qualifications Framework, The National Standards Bodies are briefed [regulation 19(1)(c) of 28 March 1998] to recognise or establish Standards Generating Bodies (SGBs).

SGBs shall:

- a. generate standards and qualifications in accordance with the Authority requirements in identified sub-fields and levels;
- b. update and review standards;
- c. recommend standards and qualifications to National Standards Bodies;
- d. recommend criteria for the registration of assessors and moderators or moderating bodies; and
- e. perform such other functions as may from time-to-time be delegated by its National Standards Body.

Any bodies wishing to nominate representatives, make application to serve on, or make any other submission with regard to the above SGB should note the following information.

SGBs should be composed of organisations, which shall be key education and training stakeholder interest groups and experts in the sub-field. The NSB, when making its final decisions will have due regard for, among other things, *'the need for representativeness and equity, redress and relevant expertise in terms of the work of the SGBs.'*

Organisations proposing to nominate persons to SGBs should be sensitive to the need for **equity** and **redress**, and shall nominate persons who-

- (a) will be able to consider issues of productivity, fairness, public interest and international comparability as related to education and training in the sub-field;
 - (b) enjoy credibility in the sub-field in question, who enjoy respect; have the necessary expertise and experience in the sub-field and have the support or backing of the nominating body;
 - (c) are able to advocate and mediate the needs and interests of all levels within the sub-field covered by the Standards Generating Body;
 - (d) are able to exercise critical judgement at a high level; and
 - (e) are committed to a communication process between the Standards Generating Body, the National Standards Body and the Constituency.
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PUBLIC NOTICE BY NSB 09, HEALTH SCIENCES AND SOCIAL SERVICES, OF AN APPLICATION TO REGISTER AN SGB FOR MEDICAL LABORATORY ASSISTANTS

NSB 09 has received an application to recognise and register an SGB for Medical Laboratory Assistants for NQF levels 3 – 4.

Proposed Brief of the SGB

1. Develop learning pathways for potential qualifications and unit standards in the area of medical laboratory assistants from NQF level 3 through to NQF level 4 [Regulation 24 (1)(a)].
2. Generate qualifications and standards in the areas of medical laboratory assistants in terms of requirements of relevant legislation and the establishment of best practices and ethics across the working environment. These will include:
 - Certificate for Medical Laboratory Assistants at NQF level 3
 - Certificate for Medical Laboratory Assistants at NQF level 4 [Regulation 24 (1)(a)].
3. Ensure that practising medical laboratory assistantss are able to fulfil the requirements for registration with the relevant Professional Councils [Regulation 24 (1)(e)].
4. Recommend qualifications and standards generated under 1 and 2 above to the NSB [Regulation 24 (1)(c)].
5. Recommend criteria for the registration of assessors and moderators or moderating bodies [Regulation 24 (1)(d)].
6. Liaise with other NSBs and SGBs – within and outside NSB 09 – which have vested interests in the subject of medical laboratory assistants [Regulation 24 (1)(e)].
7. Perform such other functions as may from time to time be delegated by NSB 09: Health Sciences and Social Services [Regulation 24 (1)(e)].

PROPOSED COMPOSITION OF THE SGB

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATIONS / EXPERIENCE
Breuninger, M	WP Blood Transfusion Service	WP Blood transfusion Service	Nat Dip Med Tech; B Tech; St. Johns First Aid Instructor; 13 years' clinical; 7 years' training
Keith Donald Coetzee	Lancet Laboratories Durban	Lancet Laboratories (Employer)	Nat Dip Med Tech; Dip Production Management; 22 years' clinical; 8 years admin
Egidi Daka	Drs. Voigt, Le Roux, De Villiers and Partners (Patcare) Bloemfontein	Drs. Voigt, Le Roux, De Villiers and Partners (Pathcare)	Laboratory assistant Dr. Voigt and Partners Histology department
Nombuso Felicity Hlongwane	National Health Laboratory Services, Cytopathology Department, Hospital Street, Johannesburg	NHLS (Employer)	Diploma in Cytotechnology; B A; Trained facilitator for Lifeskills programmes; Performance management 23 years of clinical; ii years' training
Donovan Raymond Jackson	National Health Laboratories, Cape Town	National Health Laboratories, Cape Town	Receiving Clerk NHLS
Seipati Ivy Masokoane	Bophelong Hospital Laboratory Mafikeng Department of Health and Developmental Social Welfare	NEHAWU (Labour Union)	B Biomedical Technology; Certificates in HIV/Aids counseling, Corporate and Public relations, Industrial Trauma; 6 years clinical experience
Presila Soobramony Naicker	Dr. Bouwer and Partners (Ampath) Durban	Ampath (Employer)	Nat Dip Med Tech; Dip Personnel and Training Management; 8 years' clinical; 4 years' admin
Dumisani Elijah Philani Ntsele	Pathology Laboratory – Ngwelezana Empangeni	NEHAWU (Labour Union)	Nat Dip Med Tech; Dip Human Resources Management; Certificate in Project management; 18 years clinical; 16 years in senior managerial positions
Neo Segoko	Mpumalanga Department of Health Bamokgoko	Mpumalanga Department of Health	Nati Dip Bio Tech; Laboratory Manager; Member of Learnership Task team for Phlebotomy, Medical Laboratory Technicians and Medical Laboratory Assistants of the HWSETA
Wendy Ann Steytler	Drs. Dietrich, Street, penman, Senekal and Partners (Pathcare Laboratories) Cape Town	PathCare (Employer)	Nat Dipl Med Tech; Certificate in Business Management; 20 years' clinical; 8 years training.

Charlotte Strydom	South African National Blood Services, Durban	South African National Blood Services	Reg Medl Tech; 7 year's clinical; Responsible for training of staff in the laboratory / bloodbank.
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No. 476

19 April 2002

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In order to proceed with the recognition of Standards Generating Bodies in terms of Government Regulations 19(1)(c) and 22(2) of 28 March 1998, National Standards Body 09, Health Sciences and Social Services invites public comment with respect to *the acceptability of the nominees and the representativeness of the key education and training stakeholder interest groups* listed as an SGB applicant below.

In addition, the NSB invite submissions from interested parties wishing to serve on such an SGB. Interested parties should take note of the section on SGB Information below.

All nominations/ applications should be accompanied by curricula vitae.

More information regarding this application may be obtained on the SAQA website or from the SAQA offices.

Comment should reach the NSB at the address below **by not later than 14 May 2002 2002**. All correspondence should be marked **SGB Formation – NSB 09, SGB for Medical Laboratory Technicians** and be 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 - 482 0992

SGB INFORMATION

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SGBs should be composed of organisations, which shall be key education and training stakeholder interest groups and experts in the sub-field. The NSB, when making its final decisions will have due regard for, among other things, *'the need for representativeness and equity, redress and relevant expertise in terms of the work of the SGBs.'*

Organisations proposing to nominate persons to SGBs should be sensitive to the need for **equity** and **redress**, and shall nominate persons who-

- (a) will be able to consider issues of productivity, fairness, public interest and international comparability as related to education and training in the sub-field;
 - (b) enjoy credibility in the sub-field in question, who enjoy respect; have the necessary expertise and experience in the sub-field and have the support or backing of the nominating body;
 - (c) are able to advocate and mediate the needs and interests of all levels within the sub-field covered by the Standards Generating Body;
 - (d) are able to exercise critical judgement at a high level; and
 - (e) are committed to a communication process between the Standards Generating Body, the National Standards Body and the Constituency.
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PUBLIC NOTICE BY NSB 09, HEALTH SCIENCES AND SOCIAL SERVICES, OF AN APPLICATION TO REGISTER AN SGB FOR MEDICAL LABORATORY TECHNICIANS

NSB 09 has received an application to recognise and register an SGB for Medical Laboratory Technicians for NQF levels 3 – 4.

Proposed Brief of the SGB

1. Develop learning pathways for potential qualifications and unit standards in the area of medical laboratory technicians at NQF level 4 [Regulation 24 (1)(a)].
2. Generate qualifications and standards in the areas of medical laboratory technicians in terms of requirements of relevant legislation and the establishment of best practices and ethics across the working environment. These will include:
 - Certificate for Medical Laboratory Technicians at NQF level 4 [Regulation 24 (1)(a)].
3. Ensure that practising medical laboratory technicians are able to fulfil the requirements for registration with the relevant Professional Councils [Regulation 24 (1)(e)].
4. Recommend qualifications and standards generated under 1 and 2 above to the NSB [Regulation 24 (1)(c)].
5. Recommend criteria for the registration of assessors and moderators or moderating bodies [Regulation 24 (1)(d)].
6. Liaise with other NSBs and SGBs – within and outside NSB 09 – which have vested interests in the subject of medical laboratory technicians [Regulation 24 (1)(e)].
7. Perform such other functions as may from time to time be delegated by NSB 09: Health Sciences and Social Services [Regulation 24 (1)(e)].

PROPOSED COMPOSITION OF THE SGB

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATIONS / EXPERIENCE
Arendsen D	Paarl Laboratories	NEHAWU	Nat Dips Med Tech (Chem & Clinical Pathology); 21 years' clinical; 14 years' training
Armstrong, B	South African National Blood Services (SANBS) Pinetown	SANBS	Nat Dip (Blood Transfusion Technology); Dip Marketing Management; 25 years' clinical; 11 years' training
Arnold, M H	Green Point, Cape Town	National Health Laboratory Services (NHLS)	Nat Dip Med Tech (Chemistry); 31 years' clinical; 8 years' admin
Cassim, N	Johannesburg Hospital	NHLS	Nat Dip Med Tech (Chem Path); 13 years' clinical
Cronje, E	Portwood Road, Green Point	NHLS	Nat Dip (Microbiology); 20 years' clinical
Davison, G M	Groote Schuur Hospital	NHLS	M Sc (Haematology); 20 years' clinical; 5 years' admin; 5 years' teaching
De Benedictis, P	WP Blood Transfusion Services	WP Blood Transfusion Services	Nat Dip Med Tech (Blood Transfusion); 40 years' clinical; 30 years' admin
Deeks, G J	Drs Mauff, Zail, Skudowitz & Partners	Drs Mauff, Zail, Skudowitz & Partners	Nat Dips in Clinical & Chemical Pathology; 28 years' clinical
Dlamini, D	NHLS, Johannesburg	NHLS	Med Tech (Clinical Pathology)
Gwebu, J	Chris Hani Baragwanath Laboratory	NHLS Chemical Pathology	Nat Dip Med Tech (Chemical Pathology); 7 years' clinical; 4 years' admin
Hindley, N	Groote Schuur Hospital	NHLS	B Tech: 6 years' clinical
Jizana, S	Umtata State Pathology Lab	NEHAWU	Med Tech (Chemical Pathology); 11 years' clinical
Kniedel, D S	Drs du Buisson & Partners, Pretoria	Drs du Buisson & Partners, Pretoria	Nat Dip Med Tech (Haematology); 24 years' clinical; 4 years' admin
le Roux, I	Tygerberg Hospital	SMLTSA	Med Tech (Cytology); 34 years' clinical; 6 years' admin; 20 years' teaching/moderating
Mallett, J T P	NHLS Kimberley	NEHAWU	B Tech Biomedical Technology; B Tech Bus Admin; 26 years' clinical; 6 years' teaching; Chemical Pathology

Matau, M	Johannesburg NHLS	NHLS	Med Tech (Microbiology); Dips Human Resource Management & Industrial Relations; 13 years' clinical
Meiring, J A	Pathcare Laboratories	SMLTSA	M Sc; 29 years' clinical
Muller, C J F	Stellenbosch University, Faculty Health Sciences	SMLTSA	B Sc (Hons) Med Sc (Histology); 22 years' clinical; 6 years' admin
Muller, P A	Portwood Road, Green Point	NHLS	Nat Dip (Haematology); 18 years' clinical; 6 years' teaching
Papier, J	Pathcare Laboratories	Pathcare Laboratories	Nat Dip Med Tech (Histopathology); 15 years' clinical; 10 years' admin
Pillay, S	Drs Du Buisson, Bruinette & Kramer	Drs Du Buisson, Bruinette & Kramer	MBA; Nat Dip Med Tech (Cytology); 22 years' clinical; 6 years' admin
Samsodien, Y	Portwood Road, Green Point	NHLS	Nat Dip Med Tech (Clinical Pathology & Haematology); 30 years' clinical; 8 years' admin
Scholtz, J	Portwood Road, Green Point	NHLS	M Dip Tech (Biomedical Technology); 18 years' clinical; 6 years' admin
Shrives, L	KZN Prov Laboratory Services	SMLTSA	Nat Dip Med Tech (Cytology); 26 years' clinical
Smith, C	Pathcare Laboratories	Drs Dietrich, Street Penman, Senekal	Nat Dip Med Tech (Chemical Pathology); 33 years' clinical
van Schalkwyk, E	NHLS	Health Professions Council of South Africa (HPCSA)	Dip. Med Tech (Microbiology); 37 years' clinical; 20 years teaching
van Zyl, Yvonne	Johannesburg NHLS	NHLS	Nat Dip Cytotechnology; 12 years' clinical; 4 years' teaching experience

No. 477

19 April 2002

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

Tourism

Registered by NSB 11, Services, publishes the following qualifications and unit standard for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification and unit standard upon which qualifications are based. The full qualification and unit standards can be accessed via the SAQA web-site at www.saqa.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, 659 Pienaar street, Brooklyn, Pretoria.

Comment on the unit standards should reach SAQA at the address ***below and no later than 14 May 2002***. All correspondence should be marked **Standards Setting – SGB for Tourism** and addressed to

The Director: Standards Setting and Development
SAQA

Attention: Mr. D Mphuthing

Postnet Suite 248

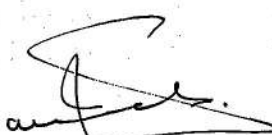
Private Bag X06

Waterkloof

0145

or faxed to 012 – 482 0907

PR


SAMUEL B.A. ISAACS
EXECUTIVE OFFICER

General Education and Training Certificate: Tourism

Field : Services

Sub-field : Hospitality, Travel, Tourism, Gaming and Leisure

NQF level : 1

Credits : 123

Rationale of the Qualification

The GETC level or Level 1 of the NQF is a key stage within the learning pathways of those with limited formal education. As the culmination of Adult Basic Education and Training (ABET), it represents strategic development of under-educated individuals. As the bridge between ABET and Further Education and Training (FET), it represents the laying of a solid grounding for individuals to move into and within sector or career pathways, in many cases using already existing technical or vocational skills for purposeful progression.

On the basis of this understanding of the importance of NQF Level 1, the SGB for Hospitality, Travel, Tourism, Gaming & Leisure in consultation with THETA has developed a foundational qualification at this level in the area of Tourism.

ABET is a continuum of learning beginning at initial literacy at ABET Level 1 and culminating at ABET Level 4, that is NQF level 1. In many respects ABET has been excluded from SETA and NQF-related developments¹, primarily due to the fact that the GETC was seen as a school-focused 'general education' certificate for both school and adult learners. Industry-based qualifications were perceived as taking NQF Level 2 as their starting point.

This perception has shifted with the realisation that sustainable skills development must be based on foundational skills and knowledge, many of which are encompassed by ABET. This applies even to some learners who already have a senior certificate, but lack aspects of foundational skills.

¹ See King, M: ABET and the NQF: Skills Development, conference paper September 2002

Qualification Purpose

A learner who has achieved this qualification will have a firm foundation of portable skills for further learning, an overview of key issues and practices in the tourism industry, and entry skills and knowledge relating to a specific area of tourism.

Learners will have achieved a GET level both in general education areas such as literacy and numeracy, and in a range of life skills, providing them with the platform from which to proceed into the FET band. Competence in language use and computation are key to further learning. Life skills such as study skills enable learners to engage successfully with further education and training opportunities. Other life skills give them an understanding of the contexts in which they live and work, including insight into technology, work and business environments, and issues such as health and ethics within society.

Learners with this qualification will also gain an introductory knowledge of the tourism industry, enabling them to understand the nature of tourists and tourism, recognise entrepreneurial opportunities in tourism, and apply core skills such as customer care in order to promote tourism. Through the elective component of the qualification learners will also be able to select a possible pathway or sector in which they can begin to apply specific skills in a tourism context

Access to qualification:

None.

Learning assumed to be in place

It is assumed that learners wishing to enter a programme leading to this qualification have demonstrated competence in the unit standards for ABET Level 3 Language and Communications, and ABET Level 3 Numeracy.

Exit level outcomes**On achieving this qualification the learner will be able to:**

1. Use language, literacy and communication to show a critical awareness of language usage; engage with a range of values in texts; identify, access, analyse, use and present information; use appropriate communication skills, conventions and structures for specific purposes and situations; explore and use a variety of strategies to learn; engage with meaning, organisation and structure in texts.
2. Use mathematics to work with numbers, number patterns, measurements, ratio and relationships, space, shape and mapping; and to understand the role of maths in the social, cultural, political and economic worlds.
3. Use learning and research methods which will help them analyse and organise information; utilise efficient time management and study skills; and undertake effective personal planning and self-management.
4. Function within a workplace environment and understand common workplace processes.
5. Recognise the role and impact of technology in society, and recognise and access appropriate and available technology in a specific context.
6. Pursue physical and mental health, and be aware of safety and security issues.
7. Be familiar with general business principles and practices at a basic level.

8. Show an understanding of social issues in general, and identify own values, ethics and social responsibilities.
9. Identify key features of tourists and the tourism industry in South Africa.
10. Recognise key role-players in the tourist industry, and use this knowledge to identify and select career opportunities in tourism.
11. Recognise business opportunities in tourism.
12. Apply principles of customer care and safety awareness in tourism.
13. Apply core skills and knowledge in tourism to a particular tourism context (e.g. hospitality, gaming, guiding or crafts).

Associated assessment criteria

In particular assessors should check for:

The learner must demonstrate an ability to consider a range of options and make decisions about;

- Using communication, computational and learning skills effectively in order to make choices about further education and training.
- Using information gathered about tourism to make appropriate decisions regarding career options.
- Using knowledge of tourism and tourists to act in ways which promote tourism.

The learner must demonstrate an understanding of:

- The nature and functions of a broad range of generic skills as a foundation for learning.
- Good practice in the tourism industry.
- Ethical and safety issues in tourism.
- Key features of tourism.

The learner must demonstrate an ability to:

- Apply learning skills and general knowledge in their personal, workplace and educational lives.
- Apply skills relevant to a tourism context appropriately.
- Work with others in both learning and work-oriented situations.

Integrated assessment

Integrated assessment at the level of qualification provides an opportunity for learners to show that they are able to integrate concepts, ideas and actions across unit standards to achieve competence that is grounded and coherent in relation to the purpose of the qualification. Integrated assessment should show how already demonstrated competence in individual areas can be linked and applied for the achievement of a holistic outcome.

Integrated assessment must judge the quality of the observable performance, and also the quality of the thinking that lies behind it. Assessment tools must encourage learners to give an account of the thinking and decision-making that underpin their demonstrated performance. Some assessment practices will demand practical evidence while others may be more theoretical, depending on the type of outcomes to be assessed, and the nature and level of the qualification. The ratio between action and interpretation is not fixed, but varies according to the demands of the qualification.

While the generic component (literacy, communication and life skills) of this qualification at NQF Level 1 can be assessed through occupational contexts and activities relating to tourism, care must be taken in both the learning programme and the assessment to ensure that these foundational skills are truly portable. The primary aim of this qualification is to ensure that learners have a sound base of general education to prepare them for further learning, whatever career path they may choose. Learners must be able to transfer generic skills such as language, computation and learning skills etc across a number of different contexts, and apply them within a number of learning areas.

A broad range of task-orientated and theoretical assessment tools may be used, with the distinction between practical knowledge and disciplinary knowledge maintained so that each takes its rightful place.

Articulation possibilities

This qualification shares the same fundamental learning areas as that of the GETC in Conservation and Sport, Recreation and fitness.

These qualifications are generic in the sense that they share a large portion of standards relating to knowledge and skill areas which are foundational to further learning; they are specific in the sense that they contain standards which address core and elective skills and knowledge needed for progress in the areas noted above.

Criteria for registration of assessors

For an applicant to register as an assessor, the applicant needs:

- A minimum of two years practical, relevant occupational experience.
- Declared competent in all the outcomes of the National Assessor Unit Standards as stipulated by SAQA.
- Detailed documentary proof of educational qualification, practical training undergone, and experience gained by the applicant must be provided (Portfolio of evidence).
- Meet any other stipulated requirements by the relevant ETQA.

Recognition of prior learning

This qualification may be achieved in part or as a whole through the recognition of prior learning, according to the requirements of the standards.

Any learner wishing to be directly assessed may arrange to do so, without attending further training or education. The assessor and learner will decide together on the most appropriate assessment route to be taken.

International comparability

The bulk of this qualification is made up of the Fundamental components, reflecting foundational learning and generic skills and knowledge. These have been derived from best practice adult education both local and international. The core and elective components have been developed taking into account South Africa's unique tourism context, but also looking at international best practice.

Moderation

1. Anyone assessing a learner against these standards must be registered as an assessor with the relevant ETQA.
2. Any institution offering learning that will enable achievement of these unit standards or will assess these unit standards must be accredited as a provider with the relevant ETQA.
3. Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines in the relevant qualification and the agreed ETQA procedures.

Therefore anyone wishing to be assessed against this qualification may apply to be assessed by any assessment agency, assessor or provider institution which is accredited by the relevant ETQA.

	Level 1	Level 2	Total
Fundamental	80	-	80
Core	23	-	23
Elective	-	20	20
Total	103	20	123

General Education and Training Certificate: Tourism
NQF1 – 123 credits

Fundamental				Core				Elective			
Unit standard title	SAQA ID	Level	Credit	Unit standard title	SAQA ID	Level	Credit	Unit standard title	SAQA ID	Level	Credit
Cluster of standards for communication and language studies. <ul style="list-style-type: none"> Show a critical awareness of language usage. Engage with aesthetic, affective, cultural, and social values in texts. Identify, access, use and present information. Use appropriate communication skills, conventions and structure for specific purposes and situations. Explore and use a variety of strategies to learn. Engage with meaning, organisation and structure in texts. 	COM001	1	20	Identify career opportunities in different sectors of the tourism industry.		1	4	Create a guided experience for customers.	8478	2	20
	COM002	1	3								
	COM003	1	3								
	COM004	1	4								
	COM005	1	4								
	COM006	1	3								
Cluster of standards for Mathematical literacy, Mathematics and Mathematical Sciences. <ul style="list-style-type: none"> Demonstrate understanding about ways of working with whole numbers. Demonstrate understanding about ways of working with positive rational numbers. Demonstrate understanding about ways of working with integers. Recognise and work with patterns. Use and express generalisations of patterns in various contexts. Critically analyse how maths is used in social, political and economic relations. Work with measurement in a variety of contexts. Collect, analyse, use and communicate numerical data. Use mathematical models to describe and represent relationships between quantities in a variety of ways. Use algebraic notation, conventions and terminology to solve problems. Analyse, interpret and give meaning to mathematical models in a variety of ways and in different contexts. Use maps to access and communicate information concerning routes, location and 	Math 001	1	16	Apply basic customer care in Tourism.		1	7				
	Math 002	1	2								
	Math 003	1	1								
	Math 004	1	1								
	Math 005	1	2								
	Math 006	1	2								
	Math 007	1	2								
	Math 008	1	2								
	Math 009	1	3								
	Math 010	1	3								
	Math 011	1	3								
	Math 012	1	1								

information concerning routes, location and direction.											
▪ Describe and represent objects and the environment in terms of shape, space, time and motion.	Math 013	1	2								
▪ Analyse cultural products and processes as representations of shape, space and time.	Math 014	1	2								
Use basic learning and research skills.		1	4	Understand the nature of tourists in and to South Africa.		1	4				
Practice effective self-management skills.	LO06	1	2	Recognise principles and practices of entrepreneurship in tourism.		1	4				
Understand the world of work.		1	5	Identify key features of tourism in South Africa.		1	4				
Demonstrate a critical understanding of the role and impact of technology in society.	TECH 001	1	3								
Identify and select appropriate technology.		1	1								
Demonstrate an understanding of basic accounting	EMS 005	1	4								
Identify, analyse and select various business opportunities.	SMME 02	1	3								
Demonstrate an understanding of a general business plan and adapt it to a selected business idea.	SMME 03	1	7								
Understand human physical development, health and sexuality and their consequences.	LO02	1	2								
Demonstrate skills that relate to a safe and secure environment.	LO07	1	2								
Display critical insight into one-on-one, family and community dynamics and value systems.	LO03	1	2								
Demonstrate a critical understanding of the inter-relationships between social justice, equity and democracy.	HSS02	1	4								
Identify personal values and ethics in the workplace.		1	4								
Show awareness of own social responsibilities.		1	1								
TOTAL			80				23				20

Unit standards for: General Education & Training Certificate : Tourism**Unit Standards at NQF Level 1**

- * Title: Show a critical awareness of language usage (ID: COM 001).
 - * Title: Engage with esthetic, affective, cultural, and social values in texts (ID: COM 002).
 - * Title: Identify, access, use and present information (ID: COM 003).
 - * Title: Use appropriate communication skills, conventions and structure for specific purposes and situations (ID: COM 004).
 - * Title: Explore and use a variety of strategies to learn (ID: COM 005).
 - * Title: Engage with meaning, organisation and structure in texts (ID: COM 006).
 - * Title: Demonstrate understanding about ways of working with whole numbers (ID: Math 001).
 - * Title: Demonstrate understanding about ways of working with positive rational numbers (ID: Math 002).
 - * Title: Demonstrate understanding about ways of working with integers (ID: Math 003).
 - * Title: Recognise and work with patterns (ID: Math 004).
 - * Title: Use and express generalizations of patterns in various contexts (ID: Math 005).
 - * Title: Critically analyse how maths is used in social, political and economic relations (ID: Math 006).
 - * Title: Work with measurement in a variety of contexts (ID: Math 007).
 - * Title: Collect, analyse, use and communicate numerical data (ID: Math 008).
 - * Title: Use mathematical models to describe and represent relationships between quantities in a variety of ways (ID: Math 009).
 - * Title: Use algebraic notation, conventions and terminology to solve problems (ID: Math 010).
 - * Title: Analyse, interpret and give meaning to mathematical models in a variety of ways and in different contexts (ID: Math 011).
 - * Title: Use maps to access and communicate information concerning routes, location and direction (ID: Math 012).
 - * Title: Describe and represent objects and the environment in terms of shape, space, time and motion (ID: Math 013).
 - * Title: Analyse cultural products and processes as representations of shape, space and time (ID: Math 014).
 - * Title: Practice effective self-management skills (ID: LO/06).
 - * Title: Demonstrate a critical understanding of the role and impact of technology in society (ID: TECH001).
 - * Title: Demonstrate an understanding of basic accounting (ID: EMS 005).
 - * Title: Identify, analyse and select various business opportunities (ID: SMME 002).
 - * Title: Demonstrate an understanding of a general business plan and adapt it to a selected business idea (ID: SMME 003).
 - * Title: Understand human physical development, health and sexuality and their consequences (ID: LO/02).
 - * Title: Demonstrate skills that relate to a safe and secure environment (ID: LO/07).
 - * Title: Display critical insight into one-on-one, family and community dynamics and value systems (ID: LO/03).
 - * Title: Demonstrate a critical understanding of the inter-relationships between social justice, equity and democracy (ID: HSS02).
1. Title: Use basic learning and research skills.
 2. Title: Understand the world of work.
 3. Title: Identify and select appropriate technology.
 4. Title: Identify personal values and ethics in the workplace.
 5. Title: Show awareness of own social responsibilities.
 6. Title: Identify career opportunities in different sectors of the tourism industry.
 7. Title: Apply basic customer care in tourism.
 8. Title: Understand the nature of tourists in and to South Africa.
 9. Title: Recognise principles and practices of entrepreneurship in tourism.
 10. Title: Identify key features of tourism in South Africa.

Unit Standards at NQF Level 2

- * Title: Create a guided experience with Customers (ID:8478).

Unit standards titles and specific outcomes at NQF level 1**1. Title: Use basic learning and research skills.**

- Specific outcome 1. Organise time.
- Specific outcome 2. Use learning programme material.
- Specific outcome 3. Select and use appropriate resources.
- Specific outcome 4. Use learning strategies.
- Specific outcome 5. Analyse information.

2. Title: Understand the world of work.

- Specific outcome 1. List the key features of a workplace.
- Specific outcome 2. Identify common features of workplace roles and responsibilities.
- Specific outcome 3. Use basic self management in the workplace.
- Specific outcome 4. Describe a range of workplaces.

3. Title: Identify and select appropriate technology.

- Specific outcome 1. Describe the concept of technology.
- Specific outcome 2. Explore skills needed to access different types of technology.
- Specific outcome 3. Match technology products and skills to a variety of workplace contexts.
- Specific outcome 4. Apply understanding of technology in a specific workplace context.

4. Title: Identify personal values and ethics in the workplace.

- Specific outcome 1. Reflect upon a value system.
- Specific outcome 2. Explore the need for ethics in the workplace.
- Specific outcome 3. Respect the values of others in the workplace.
- Specific outcome 4. Identify areas where value conflicts could occur in a specific context.

5. Title: Show awareness of own social responsibilities.

- Specific outcome 1. Reflect on the idea of an individual's social responsibility.

Specific outcome 2. Identify ways in which social responsibility applies to own context.

6. Title: Identify career opportunities in different sectors of the tourism industry.

Specific outcome 1. Discuss the different sectors in the tourism industry to demonstrate understanding of the functional areas within each sector.

Specific outcome 2. Identify the sectors represented locally and select a minimum of two sectors to investigate career opportunities.

Specific outcome 3. Demonstrate a thorough understanding of the skills and knowledge required and the scope for further progress in a minimum of three identified career opportunities across the chosen sectors.

Specific outcome 4. Investigate the organisations in the support services sector to identify the bodies representing the various sectors in the tourism industry.

7. Title: Apply basic customer care in tourism.

Specific outcome 1. Communicate with customers in an appropriate manner.

Specific outcome 2. Identify customer needs and direct them to appropriate services and products.

Specific outcome 3. Assist tourists to plan particular activities.

Specific outcome 4. Care for customers with special needs.

Specific outcome 5. Identify dangers or hazards in a specific context to warn tourists in appropriate manner.

Specific outcome 6. Refer tourists to health care and emergency services when necessary.

8. Title: Understand the nature of tourists in and to South Africa.

Specific outcome 1. Identify reasons why tourists visit South Africa.

Specific outcome 2. Compare different categories of tourists.

Specific outcome 3. Compare different types of tourist attractions.

Specific outcome 4. Apply understanding of tourist types and needs in order to suggest suitable attractions to meet specific tourist needs.

9. Title: Recognise principles and practices of entrepreneurship in tourism.

Specific outcome 1. Describe the concept of entrepreneurship.

Specific outcome 2. Identify the features of successful entrepreneurship in tourism micro enterprises.

Specific outcome 3. Identify the basic skills needed for successful entrepreneurship in tourism.

Specific outcome 4. Explore micro-business opportunities in tourism in a specific context.

10. Title: Identify key features of tourism in South Africa.

Specific outcome 1. Explain the terms tourist, tourism and tourism product to demonstrate understanding of these concepts.

Specific outcome 2. Collect information and report on the impact of tourism locally, provincially and nationally.

Specific outcome 3. List support systems needed for successful tourism.

Specific outcome 4. Identify factors that support sustainable tourism.

Specific outcome 5. Discuss the purpose of legislation relevant to tourism.

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