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GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 715   **27 May 2002**

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SOUTH
AFRICAN
QUALIFICATIONS
AUTHORITY

NATIONAL QUALIFICATIONS FRAMEWORK

Established in terms of Act 58 of 1995

2002-05-16

Dear Sir/Madam,

The South African Qualifications Authority in terms of the National Standard Body Regulations (Government Gazette No. 18787) published on 28 March 1998, hereby publishes the new appointments of the National Standard Body on Health Sciences and Social Services (09).

Category	Nomination	Nominated by	Workplace
Business	Sharon Vasuthevan	South African Federated Chamber of Commerce (SAFCOC)	Afrox
Critical Interest group	Rooksana Rajab	National Skills Authority	Health and Welfare Sector Education and Training Authority

Yours sincerely,

SAMUEL B.A. ISAACS
EXECUTIVE OFFICER

No. 716   **27 May 2002**

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

May 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 SGB for Public Relations Management and Practices

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Steytler, Elza (Ms)	ESKOM	SGB for Public Relations Management and Practices	Holds the following qualifications: • BA • Higher Education Diploma • Certificate in Public Relations Practice (PRISA) • Certificate in Industrial Communications (SAAIE) Is registered as an Accredited Public Relations Practitioner with PRISA. Worked at ESKOM from 1981 to date and has been the Senior Advisor (Communication Capacity Building) since 1990.

Additional members for the SGB for Public Administration and Management

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Bauer, Constanze (Prof)	Vista University	Vista University	Holds the following qualifications: • BA (History, Political Studies) • BA (Hons) (Strategic Studies) • BA (Hons) (Public Admin) • MA • M ADMIN (Public Admin) • D Phil Is currently Head of

			Department/Associate Professor at Vista University
Muthwa, Sibongile (Dr)	The Fort Hare Institute of Government	University of Fort Hare	Holds the following qualifications: • BA (Hons) (Social Work) • M A (Social Policy and Development Planning) • PhD (Gender Studies and Public Policy) Is currently a Director of the Fort Hare Institute of Government and Trustee of the Joint Universities Public Management Education Trust (JUPMET)
Ngoasheng, Daphney Matsoku	South African Foundation for Public Management and Development	SAFPUM	Holds the following qualifications: • BA (Social work) • Diploma in Development Management and Planning • Diploma in Housing Policy Development and Management Is currently reading for a Masters degree in Public Administration Has been the Chief Operations Officer at SAFPUM since February 2000.
Subban, Mogesperie (Ms)	University of Durban-Westville	University of Durban-Westville	Holds the following qualifications: • B Admin • B Admin (Hons) • M Admin Currently reading for a D Admin degree. Worked in the private sector from 1985 to 1991. Was Legal Administrative Officer at the Law Clinic University of Durban – Westville from 1992 to 1995. From 1996 to date has been a lecturer in Public Administration at the same university and is now Head of the Department Management Sciences at both campuses of the University of Durban-Wetville
Wessels, Jacobus Stephanus (Prof)	UNISA	UNISA	He holds a D Phil from the University of Pretoria Worked in the Office of the Public Service Commission for 8 years and at the HSRC for six years. Has

| | | | been on the academic staff of UNISA since January 1995 and is currently Associate Professor of the Department of Public Administration.
He is a member of SAARDHE and SAAPAM. |
| | | | |

Additional members for the SGB for Generic Management

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Baloyi, Khazimula Moss (Mr)	TELKOM	TELKOM	Holds the following qualifications: • Diploma in Advanced Market Management • Diploma in Personnel Management • Certificate in Training Management Is currently reading for an MBA at UNISA Worked at TELKOM from 1984 to date, as a technician in the Production Unit (7 years), in Quality Control (7 years) and as head of the Division Quality and Efficiency (3 years). Is currently Senior Manager: Strategic Quality Management
Bezuidenhout, Adri (Ms)	Business Consultant	INPROV	Holds the following qualifications: • BA (Psychology and Sociology) • BA (Hons) (HR Development) • Higher Education Diploma Has provided consultant services to ESKOM, SASOL, Spoornet, Autonet, Telkom, ISCOR, MAST/Advtech, Old Mutual, SANLAM, Woolworths, and ABSA at various times since 1994. External examiner at RAU for HRD Certificate program and lecturer in HR module for Sports Administrators since 1998

Additional Members for SGB for Human Resource Management and Practices

NOMINEE	WORKPLACE	NOMINATING BODY	QUALIFICATION/ EXPERIENCE
Bhayi, Johannes Sibanyoni (Mr)	Ga-Rankuwa Hospital	FEDUSA	• Is a Chief Medical Technologist. • Has been involved in PAWUSA, FEDUSA and DITSELA work since 1996 • Served on Transformation Committee at Ga-Rankuwa Hospital (1999 to 2002) • Chairperson of the Restructuring and Transformation Committee of the National Health Lab Services
Legoete, Daniel Motsomi (Mr)	Ithuteng Primary School	COSATU	Holds the following qualifications: • BA)Political Science and Psychology) • Secondary Teachers Diploma Has worked in education for 24 years and has been principal of his school for 4 years Has served on the Gauteng Education and Training Council since 1998 and has served as a facilitator for SADTU for 10 years

JOE SAMUELS
DIRECTOR : STANDARDS SETTING AND DEVELOPMENT

No. 717   **27 May 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
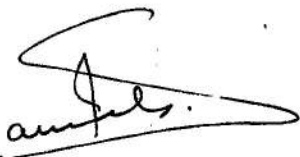
Life Skills

Registered by NSB 07, Human and Social Studies, 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.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 17 June 2002*. All correspondence should be marked **Standards Setting – SGB for Life Skills** 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

UNIT STANDARDS FOR LIFE SKILLS

UNIT STANDARDS ON NQF LEVEL 2

1.　　Title:　Know oneself
2.　　Title:　Develop oneself for a career
3.　　Title:　Manage oneself for a career

UNIT STANDARDS ON NQF LEVEL 3

1.　　Title:　Prepare for the entry into work
2.　　Title:　Work in an employment situation
3.　　Title:　Know and apply civic rights and responsibilities

UNIT STANDARDS ON NQF LEVEL 4

1.　　Title:　Know and understand governance and governance structures

UNIT STANDARDS AND SPECIFIC OUTCOMES FOR LIFE SKILLS

UNIT STANDARDS ON NQF LEVEL 2

1.　　Title:　Know oneself

Specific Outcome 1.1: Being critically aware of one's own uniqueness and of others
Specific Outcome 1.2: Display self confidence and assertiveness
Specific Outcome 1.3: Express emotional, physical, spiritual and social identity
Specific Outcome 1.4: Demonstrate awareness of the fact that one's own behaviour impacts on others

2.   Title: **Develop oneself for a career**

Specific Outcome 1.1: Understand, apply and commit to the importance of life long learning

Specific Outcome 1.2: Take responsibility for one's own continual learning and development

Specific Outcome 1.3: Identify and select suitable self-motivation techniques

Specific Outcome 1.4: Put a learning plan into practice

3.   Title: **Manage oneself for a career**

Specific Outcome 1.1: Identify opportunities and set related goals

Specific Outcome 1.2: Develop and implement a plan

Specific Outcome 1.3: Manage time effectively

Specific Outcome 1.4: Manage stress successfully

UNIT STANDARDS ON NQF LEVEL 3

1.   Title: **Prepare for entry into work**

Specific Outcome 1.1: Identify sources of information about work opportunities

Specific Outcome 1.2: Relate own strengths and interests to career/work possibilities

Specific Outcome 1.3: Access additional information about specific, suitable work opportunities

Specific Outcome 1.4: Market oneself

2.   Title: **Work in an employment situation**

Specific Outcome 1.1: Understand and work in the context of the place of work

Specific Outcome 1.2: Understand the need to work according to the job functions/description provided

Specific Outcome 1.3: Know and understand rights and responsibilities in the work place

3.   **Title: Know and Apply Civic Rights and Responsibilities**

Specific Outcome 1.1: Know what your civic rights and responsibilities are

Specific Outcome 1.2: Access resources that support the various civic rights and responsibilities afforded to individuals in a democratic society and South Africa

Specific Outcome 1.3: Exercise civic rights in a responsible manner to implement democratic citizenship

Specific Outcome 1.4: Contribute to and participate in the development of the community and society

UNIT STANDARDS ON NQF LEVEL 4

1.   **Title: Know and Understand Governance and Governance Structures**

Specific Outcome 1.1: Know and understand the importance and general purpose of structures of governance

Specific Outcome 1.2: Demonstrate an understanding of the functions and functioning of governance structures

Specific Outcome 1.3: Appropriately access and participate in the structures of governance

Specific Outcome 1.4: Apply the rule of law as it functions in the society of the individual

TITLE:	**KNOW ONESELF**

Logo:

Number:

Level: 2

Credits: 6

Field: **NSB07 Human and Social Sciences**

Sub-field: **People and Human - Centred Development**

Issue Date:

Review Date:

Purpose:

The purpose of this learning is that learners will be capable of understanding and accepting themselves as unique, confident and worthwhile human beings.

A learner credited with this Unit Standard will be able to:

1. Be critically aware of herself/himself (Being aware of one's own uniqueness and that of others)
2. Display self confidence and assertiveness
3. Express emotional, physical, spiritual and social identity
4. Demonstrate awareness of the fact that own behaviour impacts on others

Learning Assumed to be in Place:
No prior learning is assumed for this unit standard.

Range statements:

Skills/competencies regarded as comprising "intellectual skills" should include reasoning and critical thinking.

Further range statements are provided in the body of the unit standard where they apply to specific outcomes and/or assessment criteria.

Specific Outcomes and Assessment Criteria:

Specific outcome 1: Being critically aware of one's own uniqueness and that of others	Assessment criteria: 1.1 Attributes that make one a unique individual (e.g. strengths and weaknesses) are described 1.2 Own skills, abilities, self- identity, and personality are described
Range: *The focus on self includes emotional, physical, spiritual and social aspects. The learner should be able to express themselves in positive terms.*	
Specific outcome 2: Display self confidence and assertiveness	Assessment criteria: 2.1 Assertiveness and confidence with regard to general life situations are demonstrated
Specific outcome 3: Express emotional, physical, spiritual and social identity	Assessment criteria: 3.1 Own emotional, physical, spiritual and social identity is explored and developed 3.2 Knowledge of how the physical and social environment affect personal development and growth is expressed 3.3 Understanding of the ways in which their own cultural traditions have shaped them is demonstrated
Specific outcome 4: Demonstrate awareness of the fact that one's own behaviour impacts on others	Assessment criteria: 4.1 The effects of own decisions on self and others are realised and expressed 4.2 Decisions, choices and the impact of them in the context of own beliefs and values are explained

Accreditation Process:

This unit standard has been designed with a range of particular qualifications in mind, and is regarded as providing critical life skills for young adults and others intending to work. As such, it is a unit standard that can readily be included in any introductory qualification in the FET band. The assessment and moderation of this unit standard would, consequently, be done within the context of the qualification of which it is a part.

It is consequently recommended that the outcomes for this Life Skill unit standard be learned and/or assessed *in conjunction with* unit standards for the actual work being done.

An individual wishing to be assessed (including through RPL) against this unit standard may apply to an assessment agency, assessor or provider institution accredited by the relevant ETQA.

Anyone assessing a person against this unit standard must be registered as an assessor with the relevant ETQA.

Any institution offering learning towards this unit standard must be accredited as a provider with the relevant ETQA.

Moderation of assessment will be conducted by the relevant ETQA at its discretion.

Notes:

Critical Cross-field Outcomes:

The following critical cross-field outcomes are addressed by this Unit Standard:

- Identify and solve problems using critical and creative thinking.
- Work effectively in a team using critical and creative thinking activities.
- Organise and manage oneself and one's activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively, using visual, mathematical and language skills.
- Use science and technology effectively and critically.
- Demonstrate understanding the world as a set of related systems.

Addressing as well the following Developmental Outcomes:
- Reflecting on and exploring a variety of strategies to learn more effectively;
- Participating as responsible citizens in the life of local, national and global communities
- Being culturally and aesthetically sensitive across a range of contexts
- Exploring education and career opportunities
- Developing entrepreneurial opportunities

Embedded Knowledge:

The following embedded knowledge will be assessed during the assessment of the specific outcomes:

- Self-identity and an awareness of the self as an emotional, social , spiritual and physical being
- Awareness of the developmental stages that people go through
- Abstract thinking and communication skills
- Assertiveness

LS02

TITLE:	**DEVELOP ONESELF FOR A CAREER**
Logo:	
Unit Standard Number:	
Level:	**2**
Credits:	**6**
Field:	**NSB07 Human and Social Sciences**
Sub Field:	**People and Human – Centred Development**
Issue Date:	
Review Date:	

Purpose:

The purpose of the learning is that the learner will understand the importance of life long learning and be able to take responsibility for his/her own self-improvement and self-development.

A learner credited with this Unit Standard will be able to:

1. Understand, apply and commit to the importance of life long learning
2. Take responsibility for one's own continual learning and development
3. Identify and select suitable self-motivation techniques
4. Put a learning plan into practice

Learning Assumed to be in Place:

No prior learning is required for this unit standard.

Range Statement:

This unit standard covers notions of taking ownership for continuous personal self-development as well as development in the work and learning context through critical reflection and action.

Specific range statements are provided in the body of the unit standard where they apply to specific outcomes and/or assessment criteria.

Specific Outcomes and Assessment Criteria:

Specific outcome 1: Understand, apply and commit to the importance of life long learning	Assessment Criteria: 1.1 The importance of learning for one's own development is explained 1.2 Knowledge about the South African Education and Training system and how one's own learning fits into that context is demonstrated
Range: *Life long learning encompasses learning in a range of different contexts,*	
Specific outcome 2: Take responsibility for one's own continual learning and development	Assessment Criteria: 2.1 One's own skills, abilities and competence are described 2.2 Realistic learning goals and plans to achieve them are formulated
Specific Outcome 3: Identify and select suitable self-motivation techniques	Assessment criteria: 3.1 Suitable self-motivation techniques are chosen and explained 3.2 The chosen techniques are applied and evaluated over a period of time
Specific Outcome 4: Put a learning plan into practice	Assessment Criteria: 4.1 The goals of the learning plan are achieved 4.2 Learning plan is revised in order to try again if failing to achieve goals

Accreditation Process

This unit standard has been designed with a range of particular qualifications in mind, and is regarded as providing critical life skills for adults. As such, it is a unit standard that can readily be included in any introductory qualification in the FET band. The assessment and moderation of this unit standard would, consequently, be done within the context of the qualification of which it is a part.

An individual wishing to be assessed (including through RPL) against this unit standard may apply to an assessment agency, assessor or provider institution accredited by the relevant ETQA.

Anyone assessing a person against this unit standard must be registered as an assessor with the relevant ETQA.

Any institution offering learning towards this unit standard must be accredited as a provider with the relevant ETQA.

Moderation of assessment will be conducted by the relevant ETQA at its discretion.

Notes:

There is a cross reference to unit standard on Prepare for Entry into Work.
The nature and complexity of the knowledge and skills of the learner will vary according to the NQF levels.
Provision for this should be made during the development and facilitation of the training programme.

Critical Cross-field Outcomes
The following critical cross-field outcomes are addressed by this Unit Standard:

- Identify and solve problems using critical and creative thinking.
- Work effectively in a team using critical and creative thinking activities.
- Organise and manage oneself and one's activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively, using visual, mathematical and language skills.
- Use science and technology effectively and critically.
- Demonstrate understanding the world as a set of related systems.

Addressing as well the following Developmental Outcomes:
- Reflecting on and exploring a variety of strategies to learn more effectively;
- Participating as responsible citizens in the life of local, national and global communities
- Being culturally and aesthetically sensitive across a range of contexts
- Exploring education and career opportunities
- Developing entrepreneurial opportunities

Embedded Knowledge

The following embedded knowledge will be assessed during the assessment of the specific outcomes:

- An awareness of the concept of self - development
- Able to find and access information about learning institutions
- Motivation Techniques
- Developing and setting learning goals

LS03

TITLE:	**MANAGE ONESELF FOR A CAREER**
Logo:	
Number:	
Level:	2
Credits:	6
Field:	**NSB07 Human and Social Sciences**
Sub-field:	**People and Human - Centred Development**
Issue Date:	
Review Date:	

Purpose:

The purpose of this learning is that the learners will be able to attend to personal needs, manage their own behaviour; manage time and exercise personal choices in a manner that both is reflective and independent.

A learner credited with this Unit Standard will be able to:

1. Identify opportunities and set related goals
2. Develop and implement a plan of action
3. Manage time effectively
4. Manage stress successfully

Learning Assumed to be in Place:

Literacy and Numeracy are assumed.

The learner must have completed Unit standards LSO1 'Know Oneself' and LSO2 'Develop Oneself'.

Range statements:

This unit standard covers a range of important self- management techniques ranging from making decisions, setting goals, implementing plans, prioritising and solving

problems to managing time, stress and finances with improved effectiveness. Further range statements are provided in the body of the unit standard where they apply to specific outcomes and/or assessment criteria.

Specific Outcomes and Assessment Criteria:

Specific outcome 1: Identify opportunities and set related goals	Assessment criteria: 1.1 Related goals have been set 1.2 Relevant and realistic opportunities are identified 1.3 Decisions are made and reflected in selected goals Range: *The goals are specific, measurable, achievable, realistic and time bound with regard to a career path.*
Specific outcome 2: Develop and implement a plan of action	Assessment criteria: 2.1 A schedule (plan of action) for a career is developed with timeframes, activities and goals 2.2 Appropriate people and resources are identified 2.3 Progress is reviewed regularly and plans are adjusted accordingly
Specific outcome 3: Manage time effectively	Assessment criteria: 3.1 One's own time is planned and activities are prioritised 3.2 Deadlines, appointments and commitments are met
Specific outcome 4: Manage stress successfully	Assessment criteria: 4.1 Own fears and anxieties that lead to stress are identified 4.2 Constructive stress management techniques are identified, selected and applied

Accreditation Process:

This unit standard has been designed with a range of particular qualifications in mind, and is regarded as providing critical life skills for young adults and others intending to work. As such, it is a unit standard that can readily be included in any introductory qualification in the FET band. The assessment and moderation of this unit standard would, consequently, be done within the context of the qualification of which it is a part.

It is consequently recommended that the outcomes for this Life Skill unit standard be learned and/or assessed *in conjunction with* unit standards for the actual work being done.

An individual wishing to be assessed (including through RPL) against this unit standard may apply to an assessment agency, assessor or provider institution accredited by the relevant ETQA.

Anyone assessing a person against this unit standard must be registered as an assessor with the relevant ETQA.

Any institution offering learning towards this unit standard must be accredited as a provider with the relevant ETQA.

Moderation of assessment will be conducted by the relevant ETQA at its discretion.

Notes:

There are links to the Unit standards on Time Management (NQF level 3) and Setting Personal Goals (NQF level 3) in the Generic Management Entrepreneurial Skills matrix. The nature and complexity of the knowledge and skills of the learner will vary according to the NQF levels. Provision for this should be made during the development and facilitation of the training programme.

Critical Cross-field Outcomes:

The following critical cross-field outcomes are addressed by this Unit Standard:

- Identify and solve problems using critical and creative thinking.
- Work effectively in a team using critical and creative thinking activities.
- Organise and manage oneself and one's activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively, using visual, mathematical and language skills.
- Use science and technology effectively and critically.
- Demonstrate understanding the world as a set of related systems.

Addressing as well the following Developmental Outcomes:

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

Embedded Knowledge:

The following embedded knowledge will be assessed during the assessment of the specific outcomes:

- Developing self-management techniques

- The process of critical and analytical thinking

- The process of problem-solving

- Managing time and appropriate techniques and measures

- Managing stress

LS04

| TITLE: | KNOW AND APPLY CIVIC RIGHTS AND RESPONSIBILITIES |

Logo:

Number:

Unit Standard Level: 3

Credits: 5

Field: **NSB07 Human and Social Sciences**

Sub-field: **People and Human-Centred Development**

Issue Date:

Review Date:

Purpose:

The purpose of the learning is for people to know and apply their civic rights in a responsible manner in order to contribute to and uphold a democratic society.

A learner credited with this Unit Standard will be able to:

1. Know what their civic rights and responsibilities are
2. Access resources that support the various civic rights and responsibilities afforded to individuals in a democratic society and South Africa
3. Exercise civic rights in a responsible manner to implement democratic citizenship
4. Contribute to and participate in the development of the community and society.

Learning Assumed to be in Place:

The credit value of the Unit Standard is based on the assumption that people have little formal understanding of their civic rights and responsibilities, though they may have a well-defined sense of community and citizenship based on traditional values. It is assumed that people will have a sense of knowing who they are and are able to manage themselves (LS01 & LS03).

Range Statement:

Specific range statements are provided in the body of the unit standard where they apply to specific outcomes and/or assessment criteria.

Specific Outcomes and Assessment Criteria:

Specific Outcome 1: **Know what your civic rights and responsibilities are**	**Assessment criteria:** **1.1 Knowledge of the range of rights and responsibilities afforded to an individual in a democratic society and South Africa is displayed**
Range: *The range of rights and responsibilities afforded to an individual in a democratic society and South Africa includes reference to the Bill of Rights and the national Constitution.*	
Specific Outcome 2: **Access resources that support the various civic rights and responsibilities afforded to individuals in a democratic society and South Africa**	**Assessment criteria:** **2.1 Various resources that support civic rights and responsibilities are accessed**
Range: *These resources include legislative policies, local and national civic structures and publications.*	
Specific Outcome 3: **Exercise civic rights in a responsible manner to implement democratic citizenship**	**Assessment criteria:** **3.1 The fact that civic rights are exercised in a responsible manner is demonstrated**
Specific Outcome 4: **Contribute to and participate in the development of the community and society**	**Assessment criteria:** **4.1 The fact that one's behaviour can have impact on others and society is explored and explained** **4.2 One's participation in nation-building activities is explained and demonstrated**
Range: *The impact of people's actions and decisions may range from the immediate to long-term implications, big (major) or small (minor), and can range from immediate friends and family to the global community.*	

Accreditation Process

This unit standard has been designed with a range of particular qualifications in mind, and is regarded as providing critical life skills for adults. As such, it is a unit standard that can readily be included in any introductory qualification in the FET band. The assessment and moderation of this unit standard would, consequently, be done within the context of the qualification of which it is a part.

An individual wishing to be assessed (including through RPL) against this unit standard may apply to an assessment agency, assessor or provider institution accredited by the relevant ETQA.

Anyone assessing a person against this unit standard must be registered as an assessor with the relevant ETQA.

Any institution offering learning towards this unit standard must be accredited as a provider with the relevant ETQA.

Moderation of assessment will be conducted by the relevant ETQA at its discretion.

Notes:

It is recommended that this Unit Standard be addressed in conjunction with the Unit Standards on Know and Understand Governance and Governance Structures (LS05).

Critical Cross-field Outcomes
The following critical cross-field outcomes are addressed by this Unit Standard:

- Identify and solve problems using critical and creative thinking.
- Work effectively in a team using critical and creative thinking activities.
- Organise and manage oneself and one's activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively, using visual, mathematical and language skills.
- Use science and technology effectively and critically.
- Demonstrate understanding the world as a set of related systems.

Addressing as well the following Developmental Outcomes:
- Reflecting on and exploring a variety of strategies to learn more effectively;
- Participating as responsible citizens in the life of local, national and global communities
- Being culturally and aesthetically sensitive across a range of contexts
- Exploring education and career opportunities

These critical cross-field and developmental outcomes apply to specific outcomes 1,2,3 and 4 in that for the learner to know his/her civic rights and responsibilities and to access the necessary resources would use technology and communication skills. In order to exercise these rights and to contribute to society will require teamwork, critical and creative thinking and evaluation skills, understanding of the world and the ability to organise one's activities.

Embedded Knowledge
The following embedded knowledge will be assessed during the assessment of the specific outcomes:

- The process of accessing information
- The process of critically analysing gathered information and varying views/opinions
- The process of communicating effectively and referring others to services

- The process of organising and mobilising local and national community resources
- Literacy and reading comprehension
- The values of a social democracy and related civic rights and responsibilities

<div align="right">LS05</div>

TITLE:	**KNOW AND UNDERSTAND GOVERNANCE AND GOVERNANCE STRUCTURES**
Logo:	
Number:	
Unit Standard Level:	**4**
Credits:	**3**
Field:	**NSB07 Human and Social Sciences**
Sub-field:	**People and Human - Centred Development**
Issue Date:	
Review Date:	

Purpose:

The purpose of the learning is to facilitate the acquisition of knowledge and understanding of governance and structures of governance, and how to access and participate in the services these structures provide.

A learner credited with this Unit Standard will be able to:

1. Know and understand the importance and general purpose of structures of governance
2. Demonstrate an understanding of the functions and functioning of governance structures
3. Appropriately access and participate in the structures of governance
4. Apply the rule of law as it functions in the society of the individual

Learning Assumed to be in Place:

The credit value of the Unit Standard is based on the assumption that people have limited formal understanding of the governance structures and laws of the country, but may have informal experience with local governance.

Range Statement:

Specific range statements are provided in the body of the unit standard where they apply to specific outcomes and/or assessment criteria.

Specific Outcomes and Assessment Criteria:

Specific Outcome 1: Know and understand the importance and general purpose of structures of governance	Assessment criteria: 1.1 The need for structures to organise society is understood and explained 1.2 The value of and reasons for structures of governance are explained
Range: *The structures in place to govern and order the various aspects of our lives operate at personal (core family), local, provincial, national levels and even include global structures of governance.*	
Specific Outcome 2: Demonstrate an understanding of the functions and functioning of governance structures	Assessment criteria: 2.1 The functions and functioning of the structures of governance are understood and explained Range: *Governance structures are required to fulfil particular functions. These include delivering services, organising and mobilising resources, reporting back on activities and financial management, ensuring that people are held accountable and lobbying for policy change.* *There should be clear distinction between the roles of "governance" and "management".*
Specific Outcome 3: Appropriately access and participate in the structures of governance	Assessment criteria: 3.1 Relevant governance structures are accessed, pertaining to the specific situation and/or need
Range: *It is necessary for an individual to determine which particular structures of governance are relevant to her/his particular situation and circumstances. This includes determining the appropriate level – be it personal, local, provincial, national or global level.* *He/she should identify as well the mechanisms he/she can use to access these structures*	
Specific Outcome 4: Apply the rule of law as it functions in the society of the individual	Assessment criteria: 4.1 Demonstrated understanding of the laws and policies that guide and govern the society of the individual Range: *This understanding is linked to one's responsibility to support the rule of law and to take an active role in enforcing law and order by for example reporting criminal activity.*

Accreditation Process

This unit standard has been designed with a range of qualifications in mind, and is regarded as providing critical life skills for adults. As such, it is a unit standard that can readily be included in any introductory qualification in the FET band. The assessment and moderation of this unit standard would, consequently, be done within the context of the qualification of which it is a part.

An individual wishing to be assessed (including through RPL) against this unit standard may apply to an assessment agency, assessor or provider institution accredited by the relevant ETQA.

Anyone assessing a person against this unit standard must be registered as an assessor with the relevant ETQA.

Any institution offering learning towards this unit standard must be accredited as a provider with the relevant ETQA.

Moderation of assessment will be conducted by the relevant ETQA at its discretion.

Notes:

It is recommended that this Unit Standard be addressed in conjunction with the Unit Standard on Civic Rights and Responsibilities (LS04).

Critical Cross-field Outcomes
The following critical cross-field outcomes are addressed by this Unit Standard:
- Identify and solve problems using critical and creative thinking.
- Work effectively in a team using critical and creative thinking activities.
- Organise and manage oneself and one's activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively, using visual, mathematical and language skills.
- Use science and technology effectively and critically.
- Demonstrate understanding the world as a set of related systems.

Addressing as well the following Developmental Outcomes:
- Reflecting on and exploring a variety of strategies to learn more effectively;
- Participating as responsible citizens in the life of local, national and global communities
- Being culturally and aesthetically sensitive across a range of contexts
- Exploring education and career opportunities

These critical cross-field and developmental outcomes apply to specific outcomes 1,2,3 and 4. In order for the learner to know about and access the structures of governance, he/she will use technology, communication skills and implement critical and creative skills as well evaluating information in the process. To apply the rule of law it is necessary to understand the world, organise one's activities and be able to work in a team.

Embedded Knowledge

The following embedded knowledge will be assessed during the assessment of the specific outcomes:

- The process of contacting structures of governance and accessing services
- The understanding of consequences
- The process of critical reflection
- The process of transferring knowledge and understanding to other contexts
- The process of distinguishing between one's own rights and responsibilities and the rights and responsibilities of others
- Purpose, structures and functions of governance

LS06

TITLE:	**PREPARE FOR ENTRY INTO WORK**
Logo:	
Number:	
Level:	**3**
Credits:	**12**
Field:	**NSB07 Human and Social Sciences**
Sub-field:	**People and Human - Centred Development**
Issue Date:	
Review Date:	
Purpose:	

Learning is aimed at people who intend to access information about employment opportunities and need to know and use the usual practices for applying for a job, a course of learning, or a loan in order to enter the world of work successfully.

People credited with this Unit Standard will be able to:

1. Identify sources of information about work opportunities
2. Relate own strengths and interests to career/work possibilities
3. Access additional information about specific, suitable work opportunities
4. Market oneself
5. Follow up after an application/interview

Learning assumed to be in place:

The credit value of the unit standard is based on the assumption that people have little or no experience in accessing employment in the formal employment / self-employment sector.

It is recommended that this unit standard be done after –or in conjunction with – the unit standards dealing with self-awareness and self-management (LS01 and LS03).

While the unit standard does *not* assume that the person intending to achieve the unit standard must be able to read and write, such persons will then require someone prepared to mediate the written word etc. on their behalf. The range of strategies open to the work-seeker is however, greater for the person who can read, write and calculate.

Range statements:

This unit standard is intended to direct people to be employed, self-employed and/or access a range of possibilities (further learning etc.).

Specific range statements are provided in the body of the unit standard where they apply to specific outcomes and/or assessment criteria.

Specific Outcomes and Assessment Criteria:

Specific outcome 1: Identify sources of information about work opportunities	Assessment Criteria: 1.1 A range of sources with work-related information is identified
Range: These resources range from the printed media to the electronic media and even include going from door-to-door, business-to-business and making use of agencies, centres and official structures such as the Department of Labour	
Specific outcome 2: Relate own strengths and interests to career/work possibilities	Assessment criteria: 2.1 A personal profile (CV) as a prospective working person is developed 2.2 One or more areas of work, which are compatible with the person's profile, are identified and researched
Specific outcome 3: Access additional information about specific, suitable work opportunities	Assessment Criteria: 3.1 Information about work opportunities, including self-employment, is accessed from at least one source, but preferably from more than one in the range 3.2 Work opportunities, selected for enquiry, are in keeping with the person's capabilities and interests *Range: The work opportunities selected for further enquiry should reflect a realistic understanding of the person's own current capabilities, educational level, interests and potential, as reflected in the profile*
Range: Sources of information are listed under SO1. Additional information gathered should include the type of work opportunity, any requirements that the person is required to fulfil, contact details and information about the source of the information	
Specific outcome 4: Market oneself	Assessment criteria: 4.1 One or more 'tools' for marketing oneself are developed 4.2 The required information is collected, collated and neatly/well presented 4.3 The marketing strategies or 'tools' developed are used in pursuit of work *Range: The range includes work seeking in relatively informal situations to very formal situations, as well as setting up a business.*

Range: *Marketing 'tools' or strategies range from verbal to non-verbal preparation and information which can be presented orally or in writing.*	
Specific outcome 5: Follow up after an application/interview	**Assessment criteria:** **5.1 The application/interview is followed up with an enquiry as to the outcome** **5.2 If appropriate, a package and benefits are negotiated to the satisfaction of both parties** **5.3 The possibility of an unsuccessful outcome is considered beforehand, and disappointment is managed** **5.4 New attempts are made to find work** Range: *The person reviews his/her lack of success, and identifies (if this is the case) areas for improvement in the presentation/marketing of her-/himself. The person prepares these changes – if necessary, with the help of others.*

Accreditation Process

This unit standard has been designed with a range particular qualification in mind, but is regarded as providing critical life skills for young adults and others intending to work. As such, it is a unit standard that can readily be included in any introductory qualification in the FET band. The assessment and moderation of this unit standard would, consequently, be done within the context of the qualification of which it is a part.

An individual wishing to be assessed (including through RPL) against this unit standard may apply to an assessment agency, assessor or provider institution accredited by the relevant ETQA.

Anyone assessing a person against this unit standard must be registered as an assessor with the relevant ETQA.

Any institution offering learning towards this unit standard must be accredited as a provider with the relevant ETQA.

Moderation of assessment will be conducted by the relevant ETQA at its discretion.

Notes:

Critical cross-field outcomes

The following critical cross-field outcomes are addressed by this Unit Standard:

- Identify and solve problems using critical and creative thinking.
- Work effectively in a team using critical and creative thinking activities.
- Organise and manage oneself and one's activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively, using visual, mathematical and language skills.

- Use science and technology effectively and critically.
- Demonstrate understanding the world as a set of related systems.

Addressing as well the following Developmental Outcomes:
- Reflecting on and exploring a variety of strategies to learn more effectively;
- Participating as responsible citizens in the life of local, national and global communities
- Being culturally and aesthetically sensitive across a range of contexts
- Exploring education and career opportunities
- Developing entrepreneurial opportunities

The critical cross-field outcomes and developmental outcomes of this unit standard apply to specific outcomes 1, 2, 3, 4, and 5. In order for the learner to prepare for entry into the world of work, he or she should be able to use creative thinking, work effectively in a team, organise and manage him or herself as well as communicate effectively in the identification of work opportunities. The use of technology will be applied by the learner in helping him or her to collect, analyse and organise information on work opportunities as well as demonstrate an understanding of the context of work in relation to the world as a set of related systems.

Embedded Knowledge

The following embedded knowledge will be assessed during the assessment of the specific outcomes:

- The process of looking for and/or creating work, and the importance of each aspect of that process
- The knowledge, skills and aptitudes required for a range of jobs
- Self-employment as a viable alternative option to being employed in an organisation
- The use and meaning of forms (e.g. job application, applications to places of learning), references, letters of application
- Verbal and non-verbal communication skills for an interview
- Marketing 'tools' and strategies

TITLE: **WORK IN AN EMPLOYMENT SITUATION**

Logo:

Number:

Level: **3**

Credits: **3**

Field: **NSB07 Human and Social Sciences**

Sub-field: **People and Human - Centred Development**

Issue Date:

Review Date:

Purpose:
The purpose of this learning is for people who have accessed or intend to access work with an employer, and who need to know how to operate responsibly within the rules and protocol of a particular workplace. The purpose of this learning is equally to help people to know and be able to assert their rights in a responsible manner in the workplace.

The outcomes are not designed to assess performance of the actual work done.

Note that this unit standard is directed towards the *acquisition* of knowledge needed to function appropriately in the work place.

A learner credited with this Unit Standard will be able to:
   1. Understand and work in the context of the place of work
   2. Understand the need to work according to the job functions/ description provided
   3. Know and understand rights and responsibilities in the work place

Learning assumed to be in place:

The credit value of the unit standard is based on the assumption that people may have some knowledge about being employed but little or no actual experience of being employed for any length of time. This means that information which is frequently assumed to be in place (e.g. work-culture protocol) is *not* taken for granted in this unit standard and so forms a part of the learning that has to be achieved.

It is recommended that this unit standard is done after the unit standards, *Prepare for entry into work (LS06)* and *Identify, discuss, describe and compare major*

economic systems, with emphasis on the South African economy (Level 2) –SAQA EMS 003 (or a similar standard).

Range statements:

This unit standard is intended to direct people to being productively employed in some form of employment. For the purposes of assessing this unit standard, the protocols, policies, procedures etc. that govern the work place of the person being assessed are the ones to be used during the assessment.

Further range statements are provided in the body of the unit standard where they apply to specific outcomes and/or assessment criteria.

Specific Outcomes and Assessment Criteria:

Specific outcome 1: Understand and work in the context of the place of work	Assessment criteria: 1.1 The formal and/or informal structures that make up the work place are identified and described 1.2 The protocols, rules, regulations that govern the work place can be identified, described and/or located for reference
Specific outcome 2: Understand the need to work according to the job functions/ description provided	Assessment criteria: 2.1 All aspects of the work assigned are explained and demonstrated Range: *This explanation need not be a technical explanation but it must cover the most critical job functions. The explanations need to cover the rationale for the way things are done.* 2.2 The response to a number of job-related contingencies is satisfactorily described and reasons are given for the choice of response Range: *The range of contingencies will vary from ones relating to health and safety in the work place to work-related difficulties. The responses to these contingencies must reflect an understanding of the difficulty arising as well as an understanding of the consequences of taking (or not taking) the recommended action.*
Specific outcome 3: Know and understand rights and responsibilities in the work place	Assessment criteria: 3.1 Work place related rights can be identified and explained

Range: *These rights include the rights as stipulated in legislation, the Bill of Rights, the national Constitution and organisational policies.*
A person need not to exercise the right to a right in the place of work in order to achieve this outcome.

Accreditation Process

This unit standard has been designed with a range of particular qualifications in mind, and is regarded as providing critical life skills for young adults and others intending to work. As such, it is a unit standard that can readily be included in any introductory qualification in the FET band. The assessment and moderation of this unit standard would, consequently, be done within the context of the qualification of which it is a part.

It is consequently recommended that the outcomes for this Life Skill unit standard be learned and/or assessed *in conjunction with* unit standards for the actual work being done.

An individual wishing to be assessed (including through RPL) against this unit standard may apply to an assessment agency, assessor or provider institution accredited by the relevant ETQA.

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Any institution offering learning towards this unit standard must be accredited as a provider with the relevant ETQA.

Moderation of assessment will be conducted by the relevant ETQA at its discretion.

Notes:

Critical cross-field outcomes:

The following critical cross-field outcomes are addressed by this unit standard:

- Identify and solve problems using critical and creative thinking.
- Work effectively in a team using critical and creative thinking activities.
- Organise and manage oneself and one's activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively, using visual, mathematical and language skills.
- Use science and technology effectively and critically.
- Demonstrate understanding the world as a set of related systems.

Addressing as well the following Developmental Outcomes:
- Reflecting on and exploring a variety of strategies to learn more effectively;
- Participating as responsible citizens in the life of local, national and global communities
- Being culturally and aesthetically sensitive across a range of contexts
- Exploring education and career opportunities

- Developing entrepreneurial opportunities

The critical cross-field outcomes and developmental outcomes apply to specific outcomes 1, 2 and 3 of this unit standard. In order to function effectively in any work situation, the learner needs to communicate effectively, work as part of a team as well as demonstrate an understanding of the world. As part of fulfilling his or her job function/description as well as being productive, the learner needs to be able to apply creative thinking, identify and solve problems, collect analyse and organise information through the use of technology.

Embedded Knowledge

The following embedded knowledge will be assessed during the assessment of the specific outcomes:

- Knowledge of working in teams
- Knowledge of the health and safety practices applicable in the workplace
- Knowledge of work-related rights (e.g. Around working hours and conditions, overtime, work-insurance, to join a union, access to further learning, not having to disclose one's status with regard to HIV/Aids, harassment)
- Awareness of the basic protocol and/or policies associated with being employed (e.g. punctuality, being sober at work, following procedures if one is unavoidably absent etc.)

NOTE: While some of this knowledge reflects general work-culture expectations, other areas of knowledge can be quite work place specific.

No. 718   **27 May 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

Mining and Minerals

Registered by NSB 06, Manufacturing, Engineering and Technology, 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.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 17 June 2002.* All correspondence should be marked **Standards Setting – SGB for Mining and Minerals** and addressed to

> The Director: Standards Setting and Development
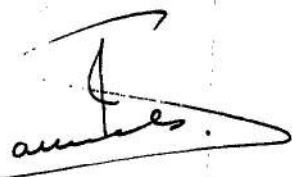> SAQA
> *Attention: Mr. D Mphuthing*
> Postnet Suite 248
> Private Bag X06
> Waterkloof
> 0145
> or faxed to 012 – 482 0907

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

UNIT STANDARDS FOR MINING AND MINERALS

UNIT STANDARDSTITLE AND SPECIFIC OUTCOMES

METALLURGY (47)

1. **Title: Separate material by means of conventional cell froth flotation. (L3/Cr10)**

Specific outcomes 1:   Demonstrate knowledge relating to the separation of material by means of conventional cell froth flotation
Specific outcomes 2:   Prepare to separate material
Specific outcomes 3:   Separate material
Specific outcomes 4:   Complete the duties pertaining to the separation process

2. **Title: Off-load xanthate from a tanker into a bulk storage facility. (L2/Cr4)**

Specific outcomes 1:   Demonstrate knowledge relating to the off-loading of xanthate
Specific outcomes 2:   Prepare to off-load xanthate
Specific outcomes 3:   Off-load xanthate
Specific outcomes 4:   Complete the duties pertaining to the xanthate off-loading process

3. **Title: Off-load a petroleum product from a tanker into a bulk storage facility. (L2/Cr4)**

Specific outcomes 1:   Demonstrate knowledge relating to the off-loading of a a petroleum product
Specific outcomes 2:   Prepare to off-load a a petroleum product
Specific outcomes 3:   Off-load a a petroleum product
Specific outcomes 4:   Complete the duties pertaining to the off-loading of a a petroleum product

4. **Title: Off-load ammonia from a tanker into a bulk storage facility. (L2/Cr4)**

Specific outcomes 1:   Demonstrate knowledge relating to the off-loading of ammonia
Specific outcomes 2:   Prepare to off-load ammonia
Specific outcomes 3:   Off-load ammonia
Specific outcomes 4:   Complete the duties pertaining to the ammonia off-loading process

5. **Title: Off-load pulp from a tanker into a storage facility. (L2/Cr2)**

Specific outcomes 1:   Demonstrate knowledge relating to the off-loading of pulp
Specific outcomes 2:   Prepare to off-load pulp
Specific outcomes 3:   Off-load pulp
Specific outcomes 4:   Complete the duties pertaining to the pulp off-loading process

6. Title; Load carbon from a storage facility into a road tanker. (L2/Cr6)

Specific outcomes 1: Demonstrate knowledge relating to the loading of carbon
Specific outcomes 2: Prepare to load carbon
Specific outcomes 3: Load carbon
Specific outcomes 4: Complete the duties pertaining to the carbon loading process

7. Title: Separate material by means of column froth flotation. (L3/Cr10)

Specific outcomes 1: Demonstrate knowledge relating to the separation of material by
                    means of column froth flotation
Specific outcomes 2: Prepare to separate material
Specific outcomes 3: Separate material
Specific outcomes 4: Complete the duties pertaining to the separation process

**8. Title: Extract a specific platinum group metal from a solution by means of a
     chemical process. (L3/Cr10)**

Specific outcomes 1: Demonstrate knowledge relating to the extraction process
Specific outcomes 2: Prepare to extract a metal
Specific outcomes 3: Extract a metal
Specific outcomes 4: Complete the duties pertaining to the metal extraction process

9. Title: Crush material by means of a rotary breaker. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the crushing of material
Specific outcomes 2: Prepare to crush material
Specific outcomes 3: Crush material
Specific outcomes 4: Complete the duties pertaining to the crushing process

10. Title: Control medium density in a dense medium separation process. (L3/Cr6)

Specific outcomes 1: Demonstrate knowledge relating to the control of medium density
Specific outcomes 2: Prepare to control medium density
Specific outcomes 3: Control medium density
Specific outcomes 4: Complete the duties pertaining to the controlling process

11. Title: Recover diamonds by means of a grease belt. (L3/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the recovery of diamonds
Specific outcomes 2: Prepare to recover diamonds
Specific outcomes 3: Recover diamonds
Specific outcomes 4: Complete the duties pertaining to the diamond recovery process

12. Title: Recover diamonds by means of hand sorting. (L2/Cr6)

Specific outcomes 1: Demonstrate knowledge relating to the recovery of diamonds by means of hand sorting
Specific outcomes 2: Prepare to recover diamonds
Specific outcomes 3: Recover diamonds
Specific outcomes 4: Complete the duties pertaining to the recovery process

13. Title: Vaporize liquid chlorine. (L3/Cr8)]

Specific outcomes 1: Demonstrate knowledge relating to the vaporizing of liquid chlorine
Specific outcomes 2: Prepare to vaporize chlorine
Specific outcomes 3: Vaporize chlorine
Specific outcomes 4: Complete the duties pertaining to the vaporizing process

14. Title: Produce final platinum ingots (bars). (L3/Cr5)

Specific outcomes 1: Demonstrate knowledge relating to the final production process
Specific outcomes 2: Prepare to produce final ingots
Specific outcomes 3: Produce final ingots
Specific outcomes 4: Complete the duties pertaining to the final production process

15. Title: Adsorb dissolved uranium onto activated resin. (L3/Cr5)

Specific outcomes 1: Demonstrate knowledge relating to uranium adsorption.
Specific outcomes 2: Prepare to adsorb uranium.
Specific outcomes 3: Adsorb uranium.
Specific outcomes 4: Complete the duties pertaining to the adsorption process.

16. Title: Control a milling and classification operation in a metallurgical plant. (L4/Cr17)

Specific outcomes 1: Demonstrate knowledge relating to the controlling of a milling and classification operation
Specific outcomes 2: Demonstrate knowledge relating to the operation of a milling and classification process
Specific outcomes 3: Control a milling and classification operation
Specific outcomes 4: Complete the duties pertaining to the controlling of a milling and classification operation

17. Title: Generate hot gas by means of a grate stoker. (L2/Cr3)

Specific outcomes 5: Demonstrate knowledge relating to the generation of hot gas
Specific outcomes 6: Prepare to generate hot gas
Specific outcomes 7: Generate hot gas
Specific outcomes 8: Complete the duties pertaining to the hot gas generation process

17. Title: Remove impurities from PGM bearing liquor by means of a hydrolysis process. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the hydrolysis process
Specific outcomes 2:   Prepare to hydrolyse liquor
Specific outcomes 3:   Hydrolyse liquor
Specific outcomes 4:   Complete the duties pertaining to the hydrolysis process

18. Title: Dissolve precious metals in an acid medium. (L3/Cr5)

Specific outcomes 1:   Demonstrate knowledge relating to the dissolution process
Specific outcomes 2:   Prepare to dissolve precious metals
Specific outcomes 3:   Dissolve precious metals
Specific outcomes 4:   Complete the duties pertaining to the dissolution process

19. Title: Clean and cool sulphur dioxide gas by means of a scrubber. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the cleaning and cooling process
Specific outcomes 2:   Prepare to clean and cool sulphur dioxide gas
Specific outcomes 3:   Clean and cool sulphur dioxide gas
Specific outcomes 4:   Complete the duties pertaining to the cleaning and cooling process

20. Title: Clean gas by means of a dry electrostatic precipitator. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the cleaning process
Specific outcomes 2:   Prepare to clean gas
Specific outcomes 3:   Clean gas
Specific outcomes 4:   Complete the duties pertaining to the cleaning process

21. Title: Produce sulphur dioxide gas by means of a fluo-solids roaster. (L3/Cr7)

Specific outcomes 1:   Demonstrate knowledge relating to the roasting process
Specific outcomes 2:   Prepare to produce sulphur dioxide gas
Specific outcomes 3:   Produce sulphur dioxide gas
Specific outcomes 4:   Complete the duties pertaining to the roasting process

22. Title: Dry sulphur dioxide gas by means of absorption. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the drying process
Specific outcomes 2:   Prepare to dry sulphur dioxide gas
Specific outcomes 3:   Dry sulphur dioxide gas
Specific outcomes 4:   Complete the duties pertaining to the drying process

23. Title: Load sulphuric acid from a bulk storage facility into a tanker. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the loading of sulphuric acid
Specific outcomes 2:   Prepare to load sulphuric acid
Specific outcomes 3:   Load sulphuric acid
Specific outcomes 4:   Complete the duties pertaining to the sulphuric acid loading
                        process

24. Title: Oversee a leaching operation in a metallurgical plant. (L4/Cr22)

Specific outcomes 1:   Demonstrate knowledge relating to the overseeing of a leaching
                        operation
Specific outcomes 2:   Demonstrate knowledge relating to operation of a leaching
                        process
Specific outcomes 3:   Oversee a leaching operation
Specific outcomes 4:   Complete the duties pertaining to the overseeing of a leaching
                        operation

25. Title: Shut down a sulphur dioxide gas generation system for maintenance. (L2/Cr8)

Specific outcomes 1:   Demonstrate knowledge relating to the shutting down of a
                        sulphur dioxide gas generation system for maintenance
Specific outcomes 2:   Determine maintenance requirements
Specific outcomes 3:   Prepare to shut down a sulphur dioxide gas generation system
Specific outcomes 4:   Shut down a sulphur dioxide gas generation system
Specific outcomes 5:   Complete the duties pertaining to the shutting down process

26. Title: Shut-down a sulphur dioxide gas absorption system for maintenance. (L2/Cr8)

Specific outcomes 1:   Demonstrate knowledge relating to shutting down a sulphur
                        dioxide gas absorption system for maintenance
Specific outcomes 2:   Determine maintenance requirements
Specific outcomes 3:   Prepare to shut down a sulphur dioxide gas absorption system
Specific outcomes 4:   Shut down a sulphur dioxide gas absorption system
Specific outcomes 5:   Complete the duties pertaining to the shutting down process

27. Title: Handle liquid cyanide safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the handling of liquid cyanide
Specific outcomes 2:   Prepare to handle liquid cyanide
Specific outcomes 3:   Handle liquid cyanide
Specific outcomes 4:   Complete the duties pertaining to cyanide handling

28. Title: Separate precious metals by means of a hydrolysis process. (L3/Cr5)

Specific outcomes 1: Demonstrate knowledge relating to the hydrolysis process
Specific outcomes 2: Prepare to hydrolyse precious metals
Specific outcomes 3: Hydrolyse precious metals
Specific outcomes 4: Complete the duties pertaining to the hydrolysis process

29. Title: Load material into railway trucks by means of an automated loading station. (L3/Cr9)

Specific outcomes 1: Demonstrate knowledge relating to the loading of railway trucks
Specific outcomes 2: Prepare to load railway trucks
Specific outcomes 3: Load railway trucks
Specific outcomes 4: Complete the duties pertaining to the loading process

30. Title: Produce Platinum ingots by means of a furnace. (L3/Cr5)

Specific outcomes 1: Demonstrate knowledge relating to the Platinum ingot production process
Specific outcomes 2: Prepare to produce Platinum ingots
Specific outcomes 3: Produce Platinum ingots
Specific outcomes 4: Complete the duties pertaining to the Platinum ingot production process

31. Title: Handle cyanide solids safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of cyanide solids
Specific outcomes 2: Prepare to handle cyanide solids
Specific outcomes 3: Handle cyanide solids
Specific outcomes 4: Complete the duties pertaining to cyanide handling

32. Title: Handle caustic soda safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of caustic soda
Specific outcomes 2: Prepare to handle caustic soda
Specific outcomes 3: Handle caustic soda
Specific outcomes 4: Complete the duties pertaining to the handling of caustic soda

33. Title: Handle sulphuric acid safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of sulphuric acid
Specific outcomes 2: Prepare to handle sulphuric acid
Specific outcomes 3: Handle sulphuric acid
Specific outcomes 4: Complete the duties pertaining to the handling of sulphuric acid

34. Title: Handle hydrochloric acid safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of hydrochloric acid
Specific outcomes 2: Prepare to handle hydrochloric acid
Specific outcomes 3: Handle hydrochloric acid
Specific outcomes 4: Complete duties pertaining to the hydrochloric acid handling process

35. Title: Handle nitric acid safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of nitric acid
Specific outcomes 2: Prepare to handle nitric acid
Specific outcomes 3: Handle nitric acid
Specific outcomes 4: Complete the duties pertaining to the nitric acid handling process

36. Title: Handle lime safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of lime
Specific outcomes 2: Prepare to handle lime
Specific outcomes 3: Handle lime
Specific outcomes 4: Complete the duties pertaining to the lime handling process

37. Title: Handle lead nitrate safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of lead nitrate
Specific outcomes 2: Prepare to handle lead nitrate
Specific outcomes 3: Handle lead nitrate
Specific outcomes 4: Complete the duties pertaining to the lead nitrate handling process

38. Title: Handle xanthate safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of xanthate
Specific outcomes 2: Prepare to handle xanthate
Specific outcomes 3: Handle xanthate
Specific outcomes 4: Complete the duties pertaining to the xanthate handling process

39. Title: Handle organic reagents safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1: Demonstrate knowledge relating to the handling of organic reagents
Specific outcomes 2: Prepare to handle organic reagents
Specific outcomes 3: Handle organic reagents
Specific outcomes 4: Complete the duties pertaining to the organic reagents handling process

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40. Title: Handle bulk oxygen safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the handling of bulk oxygen
Specific outcomes 2:   Prepare to handle bulk oxygen
Specific outcomes 3:   Handle bulk oxygen
Specific outcomes 4:   Complete the duties pertaining to the handling of bulk oxygen

41. Titl: Handle sulphur safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the handling of sulphur
Specific outcomes 2:   Prepare to handle sulphur
Specific outcomes 3:   Handle sulphur
Specific outcomes 4:   Complete the duties pertaining to the sulphur handling process

42. Title: Monitor and control a metallurgical plant from a control room. (L4/Cr20)

Specific outcomes 1:   Demonstrate knowledge relating to the monitoring and controlling of a metallurgical plant
Specific outcomes 2:   Start the metallurgical plant.
Specific outcomes 3:   Monitor and control a metallurgical plant
Specific outcomes 4:   Complete the duties pertaining to the monitoring and controlling of a metallurgical plant

43. Title: Handle flocculant safely in a metallurgical plant. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the handling of flocculant
Specific outcomes 2:   Prepare to handle flocculant
Specific outcomes 3:   Handle flocculant
Specific outcomes 4:   Complete the duties pertaining to the flocculant handling process

44. Title: Shut-down a sulphur dioxide gas cleaning system for maintenance. (L2/Cr8)

Specific outcomes 1:   Demonstrate knowledge relating to the shutting down of a sulphur dioxide gas cleaning system for maintenance
Specific outcomes 2:   Determine maintenance requirements
Specific outcomes 3:   Prepare to shut down a sulphur dioxide gas cleaning system
Specific outcomes 4:   Shut down a sulphur dioxide gas cleaning system
Specific outcomes 5:   Complete duties pertaining to the shutting down process

45. Title: Shut-down a sulphur roasting system for maintenance. (L2/Cr8)

Specific outcomes 1:   Demonstrate knowledge relating to the shutting down of a sulphur roasting system for maintenance
Specific outcomes 2:   Determine maintenance requirements
Specific outcomes 3:   Prepare to shut down a sulphur roasting system
Specific outcomes 4:   Shut down a sulphur roasting system
Specific outcomes 5:   Complete duties pertaining to the shutting down process

46. Title: Off-load sulphuric acid from a tanker into a bulk storage facility. (L2/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to the off-loading of sulphuric acid
Specific outcomes 2:   Prepare to off-load sulphuric acid
Specific outcomes 3:   Off-load sulphuric acid
Specific outcomes 4:   Complete the duties pertaining to the sulphuric acid off-loading process

47. Title: Dispatch metallurgical process by-products(L2/Cr4).

Specific outcomes 1:   Demonstrate knowledge relating to the dispatch process
Specific outcomes 2:   Prepare for the dispatch process
Specific outcomes 3:   Dispatch by-products
Specific outcomes 4:   Complete the duties pertaining to the dispatch process

UNIT STANDARDS FOR MINING AND MINERALS

UNIT STANDARDS TITLE AND SPECIFIC OUTCOMES

SURFACE MINING (16)

1. **Title: Transport personnel, material and equipment using Light Delivery Vehicle (L1/Cr4)**

Specific outcomes 1:   Prepare to transport personnel, material and equipment;
Specific outcomes 2:   Transport personnel, material and equipment; and
Specific outcomes 3:   Monitor transporting operations.

2. **Title: Drill holes using a Small Diameter Rotary Drill not exceeding 170 mm (L2/Cr10)**

Specific outcomes 1:   Prepare to drill holes;
Specific outcomes 2:   Drill holes; and
Specific outcomes 3:   Monitor drilling operation

3. **Title: Doze material using a Track Dozer with mass exceeding 30 000 kg. L2/Cr16)**

Specific outcomes 1:   Prepare to doze material;
Specific outcomes 2:   Doze material; and
Specific outcomes 3:   Monitor dozing operation.

4. **Title: Drill holes using Large Diameter Rotary Drill exceeding 170 mm (L2/Cr12)**

Specific outcomes 1:   Prepare to drill holes;
Specific outcomes 2:   Drill holes; and
Specific outcomes 3:   Monitor drilling operation

5. **Title: Operate a Skid Steer Loader (L1/Cr4)**

Specific outcomes 1:   Prepare to operate a Skid Steer Loader;
Specific outcomes 2:   Operate a Skid Steer Loader; and
Specific outcomes 3:   Monitor the operation of a Skid Steer Loader.

6. **Title: Demonstrate knowledge regarding legal aspects, types and application of Explosives and Accessories. (L3/Cr15)**

Specific outcomes 1: Demonstrate legal knowledge of explosives and accessories;
Specific outcomes 2: Demonstrate knowledge of types of explosives and accessories; and
Specific outcomes 3: Demonstrate knowledge of applications of explosives and accessories.

7. **Title: Haul and dump material using Electra-Haul Wheel Type Rigid Body Rear Dumper (L2/Cr21)**

Specific outcomes 1: Prepare to haul and dump material;
Specific outcomes 2: Haul and dump material; and
Specific outcomes 3: Monitor hauling and dumping operation.

8. Title: Remove hazardous ground by means of blasting.(L2/Cr1)

Specific outcomes 1: Prepare to remove hazardous ground by means of blasting;
Specific outcomes 2: Remove hazardous ground by blasting; and
Specific outcomes 3: Monitor removal of hazardous ground operation.

9. Title: Prepare and mark off work area for drilling. (L2/Cr1)

Specific outcomes 1: Prepare to mark off the workplace for drilling;
Specific outcomes 2: Mark off the workplace to be drilled; and
Specific outcomes 3: Monitor the marking off operations for drilling.

10. Title: Charge shot holes with explosives and initiate blast. (L2/Cr15)

Specific outcomes 1: Prepare to charge shot holes and initiate blast;
Specific outcomes 2: Initiate the blast; and
Specific outcomes 3: Monitor charging and blasting operations

11 Title: Destroy old explosives in the workplace. (L2/Cr1)

Specific outcomes 1: Prepare to destroy old explosives in the workplace;
Specific outcomes 2: Destroy old explosives; and
Specific outcomes 3: Monitor destruction of old explosives.

12. Title: Transport and distribute fuel using Off Highway Fuel Bowser. (L!/Cr4)

Specific outcomes 1: Prepare to transport and distribute fuel;
Specific outcomes 2: Transport and distribute fuel; and
Specific outcomes 3: Monitor transporting and distributing operation.

13 Title: Pump water using a Submersible De-watering Pump. (L1/Cr1)

Specific outcomes 1: Prepare to pump water;
Specific outcomes 2: Pump water; and
Specific outcomes 3: Monitor pumping operations.

14. Title: Pump water using an Electrical De-watering Pump. (L1/Cr1)

Specific outcomes 1: Prepare to pump water;
Specific outcomes 2: Pump water; and
Specific outcomes 3: Monitor pumping operations.

15. Title: Illuminate an area using a Lighting Plant. (L1/Cr1)

Specific outcomes 1: Prepare to illuminate an area;
Specific outcomes 2: Illuminate an area; and
Specific outcomes 3: Monitor Lighting Plant operations

16. Title: Treat and blast misfires. (L2/Cr1)

Specific outcomes 1: Prepare to treat and blast a misfire;
Specific outcomes 2: Treat and Blast misfires; and
Specific outcomes 3: Monitor the treating and blasting operation

UNIT STANDARDS FOR MINING AND MINERALS

UNIT STANDARDS TITLE AND SPECIFIC OUTCOMES

ASSAYING (10)

1. Title: Determine the gold content of an assayed sample by parting and weighing. (L3/Cr5)

Specific outcomes 1:   Separate the silver from gold by acid dissolution of the silver
Specific outcomes 2:   Quantify the gold content

2. Title: Sample material from rail or road trucks. (L2/Cr6)

Specific outcomes 1:   Prepare to sample the material
Specific outcomes 2:   Take a sample from rail or road trucks

3.   Title: Determine the metal content of a sample by electro-gravimetric analysis. (L3/Cr7)

Specific outcomes 1:   Demonstrate knowledge relating to electro-gravimetric
                       determinations
Specific outcomes 2:   Perform an electro-gravimetric determination

4. Title: Quantify analyte content by precipitation gravimetry. (L4/Cr5)

Specific outcomes 1:   Demonstrate knowledge relating to precipitation gravimetric
                       methods
Specific outcomes 2:   Quantify an analyte by means of precipitation gravimetry

5. Title: Prepare samples for analysis by means of microwave digestion. (L3/Cr4)

Specific outcomes 1:   Demonstrate knowledge relating to microwave digestion
Specific outcomes 2:   Digest the sample

6. Title: Dissolve a sample by means of pressure dissolution. (L2/Cr5)

Specific outcomes 1:   Demonstrate knowledge relating to pressure dissolution
Specific outcomes 2:   Dissolve a sample by means of pressure dissolution

7.   Title: Determine the dry relative density of a solid or a powder by means of a Pycnometer. (L3/Cr3)

Specific outcomes 1:   Demonstrate knowledge relating to the determination of dry
                       relative density
Specific outcomes 2:   Determine the relative dry density of a substance

8. **Title: Determine the particle size distribution of a sample by means of the sieving technique. (L2/Cr3)**

Specific outcomes 1: Demonstrate knowledge relating to particle size determinations
Specific outcomes 2: Determine particle size distribution of a sample

9. **Title: Identify and quantify the petrographic characteristics of coal macerals by means of a microscope. (L4/Cr13)**

Specific outcomes 1:   Prepare a sample for petrographic analysis
Specific outcomes 2:   Identify and quantify the maceral and microlithotype composition of coal
Specific outcomes 3:   Measure the reflectance of vitrinite

10. **Title: Handle gas cylinders in a laboratory environment. (L3/Cr2)**

Specific outcomes 1:   Demonstrate knowledge relating to the handling of gas cylinders
Specific outcomes 2:   Handle gas cylinders

UNIT STANDARDS FOR MINING AND MINERALS

UNIT STANDARDS TITLE AND SPECIFIC OUTCOMES

SURVEYING (22)

1. **Title: Compile a sample sheet and manually calculate the results for mineral evaluation purposes. (L3/Cr4)**

Specific outcomes 1:   Demonstrate knowledge of sample sheet compilation procedures;
Specific outcomes 2:   Compile a sample sheet; and
Specific outcomes 3:   Calculate and report results from a sample sheet.

2. **Title: Collect special samples for mineral evaluation purposes. (L2/Cr5)**

Specific outcomes 1:   Demonstrate knowledge of special sampling principles;
Specific outcomes 2:   Prepare to collect special samples;
Specific outcomes 3:   Collect special samples; and
Specific outcomes 4:   Complete the work sequence.

3. **Title: Determine the mineral content of a mining unit applying elementary evaluation techniques. (L3/Cr2)**

Specific outcomes 1:   Demonstrate knowledge of elementary mineral evaluation principles; and
Specific outcomes 2:   Determine the mineral content of a mining unit.

4. **Title: Sample a mining face with a scanning device for mineral evaluation purposes. (L3/Cr5)**

Specific outcomes 1:   Demonstrate knowledge of sampling and scanning principles;
Specific outcomes 2:   Prepare to scan a mining face;
Specific outcomes 3:   Scan a mining face; and
Specific outcomes 4:   Report results.

5. **Title: Conduct a grade control investigation. (L3/Cr15)**

Specific outcomes 1:   Demonstrate knowledge of grade control principles;
Specific outcomes 2:   Conduct grade investigation for selected mining unit;
Specific outcomes 3:   Implement remedial grade control strategy; and
Specific outcomes 4:   Monitor and report.

6. **Title: Measure the stratigraphic widths of a mineral exposure. (L2/Cr6)**

Specific outcomes 1:   Demonstrate knowledge associated with the measurement of stratigraphic widths;
Specific outcomes 2:   Prepare to measure stratigraphic widths; and
Specific outcomes 3:   Measure stratigraphic widths.

7. Title: Perform tape surveys. (L4/Cr7)

Specific outcomes 1:   Demonstrate knowledge of tape surveying principles;
Specific outcomes 2:   Prepare to perform a tape survey;
Specific outcomes 3:   Perform a tape survey; and
Specific outcomes 4:   Heck and report.

8. Title: Plot linear measurements on a plan and calculate quantities. (L2Cr6)

Specific outcomes 1:   Demonstrate knowledge of linear measurements, plans and calculations;
Specific outcomes 2:   Plot linear measurements on a plan;
Specific outcomes 3:   Determine quantities; and
Specific outcomes 4:   Report results.

9. Title: Maintain the coordinated position of plumb wires in a vertical sinking shaft. (L4/Cr6)

Specific outcomes 1:   Demonstrate knowledge of shaft sinking surveying;
Specific outcomes 2:   Prepare to extend steady devices;
Specific outcomes 3:   Extend steady devices; and
Specific outcomes 4:   Confirm the measurements and compile a report.

10. Title: Calculate and plot the position of an underground survey point from traverse measurements by employing first principles. (L3/Cr7)

Specific outcomes 1:   Demonstrate knowledge of traverse calculation principles;
Specific outcomes 2:   Manually calculate the position of a survey point; and
Specific outcomes 3:   Plot the survey point.

11. Title: Calculate and manufacture grade chains. (L3/Cr3)

Specific outcomes 1:   Demonstrate knowledge of grades and gradient terminology;
Specific outcomes 2:   Manually calculate grade chain lengths.

12. Title: Establish survey control and align drilling machines. (L4/Cr4)

Specific outcomes 1:   Demonstrate knowledge of alignment principles relating to raise bore machines;
Specific outcomes 2:   Design a layout for a raise bore borehole;
Specific outcomes 3:   Establish direction and grade points; and
Specific outcomes 4:   Align raise borer and report results.

13 Title: Produce a survey note. (L3/Cr4)

Specific outcomes 1:   SO1: demonstrate knowledge associated with survey notes;
Specific outcomes 2:   SO2: obtain the required information for compiling a survey note;
Specific outcomes 3:   SO3: compile a survey note; and
Specific outcomes 4:   SO4: complete the reporting sequence.

14. Title: Reconcile and interpret measured and declared mineral production results. (L4/Cr12)

Specific outcomes 1: Demonstrate knowledge of the reconciliation process;
Specific outcomes 2: Collect, verify and process data;
Specific outcomes 3: Reconcile measured and declared mineral production; and
Specific outcomes 4: Interpret and present results.

15. Title: Determine the azimuth of a survey base line by means of a gyro theodolite. (L5/Cr11)

Specific outcomes 1: Demonstrate knowledge related to gyro surveys;
Specific outcomes 2: Prepare for gyro survey;
Specific outcomes 3: Perform gyro calibration; and
Specific outcomes 4: Perform base line gyro survey and present results.

16 Title: Establish the primary station survey from plumb wires in a vertical shaft. (L5/Cr9)

Specific outcomes 1: Demonstrate knowledge of shaft station surveying principles;
Specific outcomes 2: Design the station primary survey layout and prepare for task;
Specific outcomes 3: Perform shaft station survey; and
Specific outcomes 4: Report results.

17 Title: Produce an application for permission to mine or erect structures within restricted areas. (L6/Cr8)

Specific outcomes 1: Demonstrate knowledge associated with applications;
Specific outcomes 2: Obtain the required information for an application;
Specific outcomes 3: Compile application; and
Specific outcomes 4: Complete the reporting sequence.

18 Title: Position initial survey control wires and tape brackets in a vertical sinking-shaft. (L5/CR9)

Specific outcomes 1: Demonstrate knowledge of shaft-sinking surveying;
Specific outcomes 2: Plan and determine wire and tape bracket positions;
Specific outcomes 3: Mark kerb ring;
Specific outcomes 4: Install survey control points and initial steady brackets for shaft wires;
Specific outcomes 5: Install initial tape brackets; and
Specific outcomes 6: Check and report.

19 Title: Establish side grade pegs in an inclined development end. (L4/Cr6)

Specific outcomes 1: Demonstrate knowledge of grades and gradient terminology;
Specific outcomes 2: Prepare to establish side grade pegs;
Specific outcomes 3: Establish side grade pegs; and
Specific outcomes 4: Check and report.

20: Title: Construct underground mine development layouts. (L4/Cr6)

Specific outcomes 1:   Demonstrate knowledge of mine development layout principles;
Specific outcomes 2:   Obtain design criteria;
Specific outcomes 3:   Construct layout; and
Specific outcomes 4:   Complete the work sequence.

21: Title: Construct shaft area development layouts.

Specific outcomes 1:   Demonstrate knowledge of shaft development layout principles;
Specific outcomes 2:   Obtain design criteria;
Specific outcomes 3:   Construct layout; and
Specific outcomes 4:   Complete the work sequence.

22: Title: Establish laser control for continuous alignment. (L4/Cr5)

Specific outcomes 1:   Demonstrate knowledge of lasers and their various applications;
Specific outcomes 2:   Prepare to establish laser control;
Specific outcomes 3:   Establish laser control; and
Specific outcomes 4:   Check and report.

No. 719   **27 May 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
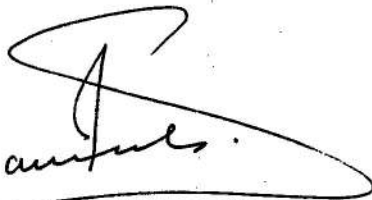
Security

Registered by NSB 08, Law, Military Science and Security, 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 17 June 2002.* All correspondence should be marked **Standards Setting – SGB for Security** 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

TITLE: National Diploma in Security Management: Electronic Security (NQF level 05)

LEVEL: 5

CREDITS: 279

FIELD: Law, Military Science and Security

SUB-FIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

Rationale for the qualification:

This qualification reflects the workplace-based needs of the electronic security industry that are expressed by employers and employees, both now and for the future. This qualification provides the learner with accessibility to be employed within the electronic security industry and provides the flexibility to pursue an electronic security career with a wide variety of specialisation options and articulation within the private security industry.

Please note that the Certificate and the diploma in Electronic Security have been designed to allow for an integrated learning pathway. The diploma is a 279 credit qualification of which the first 149 credits create an exit Certificate level. In other words, a learner completing the Certificate will have completed roughly 50% of the full diploma qualification.

Purpose of the qualification:

This qualification will allow a learner in the Private Security Industry to obtain a nationally recognised qualification in Electronic Security. This qualification will enable creative coordination of professional, feasible, up to date and safe planning, installation and maintenance of electronic security systems and equipment. A qualifying learner will be able to demonstrate knowledge and understanding of electronic security that brings about a level of professionalism within the private security industry expected at national level.

A learner will contribute positively towards supporting the private security industry as a part of South Africa's safety in society sector.

A learner who has achieved this qualification will be capable of combining a range of self-organisation and life long skills with a working knowledge of South African electronic security issues, and integrating these within a context to produce a professional practice which adheres to the high quality standards as expected by the private security industry.

A learner acquiring this qualification will have applied knowledge and skills to manage the installation of security systems and equipment wiring, planning, designing, installing, programming, testing, handing over, identifying and diagnosing of faults and maintaining of a wide range of electronic security systems and equipment.

Access to the qualification:

Access is open, however, the learner must be able to distinguish colours.

Learning assumed to be in place:

It is assumed that learners wishing to enter a program leading to this qualification have technical literacy, numeracy and communication skills equivalent to NQF level 4.

Exit level outcome 01

Install suitable cabling, junction boxes, mounting plates and equipment enclosures at premises/property to enable the correct installation of electronic security systems/equipment.

Associated assessment criteria:

- Cable and suitability for application is identified and determined

- Knowledge and understanding of operating basic hand tools is applied

- Knowledge and understanding of operating basic power tools is applied

- Knowledge and understanding of correct usage of handheld drilling apparatus is applied.

- Knowledge and understanding of correct usage of soldering apparatus is applied

- Knowledge and understanding of securing cabling from point of origin to point of termination is applied

- Knowledge and understanding of mounting devices is applied

Exit level outcome 02

Plan and design the layout of various electronic security systems/equipment.

Associated assessment criteria:

- A floor plan of the premises/property that needs to be protected by the security system/equipment is obtained/created

- Systems / equipment required and the correct placement thereof is determined.

- Knowledge and understanding of controlling stock is demonstrated.

- Power equipment is correctly confirmed

Exit level outcome 03

Install various electronic security systems/equipment.

Associated assessment criteria:

- Installation is prepared according to standard operating procedures and safety health and environmental regulations.

- Installation is performed according to standard operating procedures and safety health and environmental regulations.

- Worksite is cleaned according to standard operating procedures and safety health and environmental regulations.

- Installation is documented as and where required

Exit level outcome 04

Program various electronic security systems/equipment.

Associated assessment criteria:

- Programming is prepared according to standard operating procedures

- Installed security system and/or equipment is correctly defaulted

- Programming is performed according to standard operating procedures and system/equipment guidelines.

- Administration is conducted according to standard operating procedures

Exit level outcome 05

Test various installed electronic security systems/equipment.

Associated assessment criteria:

- Equipment/system test is prepared for according to standard operating procedures

- Tests are performed according to standard operating procedures

- Results are interpreted and action is determined according to standard operating procedures

- Test results are documented according to standard operating procedures

Exit level outcome 06

Handover installed electronic security systems/equipment.

Associated assessment criteria:

- Commissioning of electronic security system/equipment is prepared

- equipment/system functions and capabilities is explained and handed over

- Site is cleared according to standard operating procedures and safety, health and environmental regulations.

- Documentation is commissioned

Exit level outcome 07

Identify and diagnose faults in electronic security systems/equipment.

Associated assessment criteria:

- Nature of problem is identified and clarified

- Likely causes of fault is determined and ranked

- Checks and tests are applied according to standard operating procedures

- Appropriate tools and equipment are used where required

- Fault finding methodology is applied according to standard operating procedures

- Fault diagnoses is documented where required

Exit level outcome 08

Maintain electronic security systems/equipment

Associated assessment criteria:

- Maintenance is prepared for according to standard operating procedures and safety, health and environmental regulations.

- Maintenance is conduct according to standard operating procedures and safety, health and environmental regulations.

- Worksite is cleaned according to standard operating procedures

- Maintenance is documented where required

International comparability:

Benchmarking was done against the Australian standards appropriate for electronic security systems/equipment and showed a substantial degree of similarity.

International comparability could therefore be found to support this qualification.

Integrated assessment:

Integrated assessments at the level of qualification provide 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.

The applied competence (practical, foundational and reflective competencies) of this qualification will be achieved if a person is able to plan, design, install, program, test, handover, identify/diagnose faults and maintain a wide range of electronic security systems and equipment. This planning, installation, testing and maintaining of a system/equipment must be safe for society, quality assured and comply with minimum legislation.

The identifying and solving of problems, team work, organising one-self, the using of applied science, the implications of actions and reactions in the world as a set of related systems must be assessed during any combination of practical, foundational and reflexive competency assessment methods and tools to determine the whole person development and integration of applied knowledge and skills.

Applicable assessment tools to establish the foundational, reflective and embedded knowledge to problem solving and application of the world as a set of related systems within the electronic security environment.

A broad range of task orientated and theoretical assessment tools may be used.

A detailed portfolio of evidence is required to prove the practical, applied and foundational competencies of the learner.

Assessors and moderators (registered with the POSLEC SETA ETQA/AND ANY OTHER BODY WITH WHOM A MOU WAS ENTERED INTO) should develop and conduct their own integrated assessment by making use of a range of formative and summative assessment methods. Assessors should assess and give credit for the evidence of learning that has already been acquired through formal, informal and non-formal learning and experience.

Recognition of prior learning:

This competency may be achieved in part or completely through the recognition of prior learning, which includes formal, informal and non formal learning and assessment /coaching experience.

Articulation possibilities:

This qualification will allow a person to advance to learning for an Electronic Security Technician Qualification at NQF level 6.

Moderation options:

1. Anyone assessing a learner or moderating the assessment of a learner against this qualification must be registered as an assessor with the POSLEC SETA ETQA/AND ANY OTHER BODY WITH WHOM A MOU WAS ENTERED INTO.

2. Any institution offering learning that will enable achievement of this qualification must be accredited as a provider through the POSLEC SETA ETQA/AND ANY OTHER BODY WITH WHOM A MOU WAS ENTERED INTO by SAQA.

3. The POSLEC SETA ETQA/AND ANY OTHER BODY WITH WHOM A MOU WAS ENTERED INTO will oversee assessment and moderation of assessment according to the moderation guidelines in the relevant competency and the POSLEC SETA ETQA/AND ANY OTHER BODY WITH WHOM A MOU WAS ENTERED INTO procedures.

4. Moderation must include both internal and external moderation of assessment at exit points of the qualification, unless ETQA policies specify otherwise. Moderation should encompass achievement of the competence described both in individual unit standards, exit level outcomes as well as the integrated competence described in the qualification.

5. Anyone wishing to be assessed against this competency may apply to be assessed by any assessment agency, assessor or provider institution that is accredited by the POSLEC SETA ETQA/AND ANY OTHER BODY WITH WHOM A MOU WAS ENTERED INTO.

Criteria for registration of assessors:

Assessors need experience in the following areas:

- Interpersonal skills, subject matter and assessment.
- The assessor needs to be competent in the planning and conducting of assessment of learning outcomes and in the design and development of assessments as described in the unit standards plan and conduct assessment of learning outcomes NQF level 5.
- Subject matter experience must be well developed within the field of electronic security systems and equipment. The assessor must have completed:

  - A similar qualification with a minimum of 12 months field experience after he/she has completed the qualification or,
  - The subject matter experience of the assessor can be established by recognition of prior learning.

The assessors need to be registered with the POSLEC SETA ETQA/AND ANY OTHER BODY WITH WHOM A MOU WAS ENTERED INTO.

Notes supporting this qualification:

Matrix of Certificate and Diploma integration

DIPLOMA: + 130 Credits	Exit level for Diploma Credits = 279
CERTIFICATE: + 149Credits	Exit level for Certificate Credits = 149

National Certificate in Security Management: Electronic Security at NQF level 04.			152 Credits		
Fundamental	L	Cr	**Core**	L	Cr
Engage in sustained oral communication and evaluate spoken texts- 8974	4	05	Installation of electronic security systems/equipment wiring	4	15
Read analyse and respond to a variety of texts - 8975	4	05	Planning electronic security systems/equipment installations	4	10
Write for a range of contexts	4	05	Installation of electronic security systems/equipment	4	35
Use language and communication in occupational learning programmes- 8979	4	05	Programming of electronic security systems/equipment	5	20
Use mathematics to investigate and monitor the financial aspects of personal, business, national issues- 8983	4	06			
Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems- 9015	4	06			
Represent, analyse and calculate shape and motion in 2- and 3-dimentional space in different contexts- 9016	4	04			
Identify, maintain and use cutting, forming, measuring and fastening tools	2	04			
Identify & explain the functions & operations of electrical equipment	2	04			
Care for customers	4	03			
Safely & efficiently use pedestal and portable drilling and grinding machines	2	04			
Knowledge, comprehension and application of security operations	4	05			
Total available credits		56	Total available credits		80

Electives (Choose a minimum of **16** credits)	L	Cr
Implement policies regarding HIV/AIDS in the workplace	4	04
Organise oneself in the workplace	2	03
Demonstrate an understanding of professional values & ethics	5	04
Knowledge, comprehension and application of basic fire fighting	2	04
Operate a business	4	04
Plan and conduct assessment of learning	4	12

National Diploma in Security Management: Electronic Security at NQF level 05.			130 Credits		
Fundamental	L	Cr	**Core**	L	Cr
Apply communication skills in the workplace - 8647	5	10	Testing of installed electronic security systems/equipment	5	20
Manage staff development - 7863	5	05	Handing over of installed security equipment/systems	5	10
Communicate with clients and discuss work - 9407	5	05	Fault Finding in electronic security systems/equipment	5	25
Manage quality in the organisation - 7889	6	06	Maintaining security systems/equipment	5	20
Conduct on the job coaching - 7818	5	05			
Implement policies regarding HIV/AIDS in the workplace - 9224	5	04			
Lead a team - 8665	5	04			
Total available credits		39	Total available credits		
					75

Electives (Choose a minimum of **16** credits)				L	Cr
Operate a personal computer - 7786				3	06
Identify & explain the functions & operations of basic electronic equipment, interpret symbols & abbreviations pertaining to electronic circuit diagrams and construct basic electronic circuits – (NSB 06 CISGB)				3	04
Apply health and safety practices in the workplace - 9983				2	08
Knowledge, comprehension and application of basic life support and first aid - 9996				2	04
Manage staff development - 7863				5	10
Manage workplace diversity - 7881				6	15

CORE UNIT STANDARDS IN NATIONAL CERTIFICATE SECURITY MANAGEMENT: ELECTRONIC SECURITY NQF LEVEL 4.

TITLE: Planning of electronic security equipment/system installations

LEVEL: 4

CREDITS: 10

FIELD: Law, Military Science and Security

SUBFIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

PURPOSE OF THE UNIT STANDARD:

This unit standard is for persons who must be able to successfully plan and design the layout of electronic security equipment/systems

Benefit for society of this unit standard is that the person who completes this will contribute to safety in society.

A person credited with this unit standard will be able to :

- Obtain/create a floor plan of the premises/property that needs to be protected by the security system
- Determine system / devices required and correct placement
- Control stock
- Confirm power equipment

LEARNING ASSUMED TO BE IN PLACE:

It is assumed that learners wishing to attempt this unit standard have technical literacy, numeracy and communication skills equivalent to NQF level 3. A proven competency in the electronic security equipment/systems wiring unit standard.

The following knowledge, skills attitude and / or equivalent:

- Communication, including: liaison; customer service; report writing; consultation; interpersonal; listening; questioning; gaining feedback; giving information).
- Reading and interpreting plans and specifications.
- Selection and use of relevant testing tools and equipment.
- Cable isolation, testing and tagging procedures.
- Computer literacy.
- Methodical organisation of work.
- Cable handling.
- Problem solving.
- Time management.
- Safe and efficient work practices.

RANGE STATEMENTS:

This unit standard applies to persons who will plan a layout of electronic security equipment/systems installation.

This unit applies to extra-low voltage environments.

SPECIFIC OUTCOMES AND ASSESSMENT CRITERIA:

SPECIFIC OUTCOME 1:

Obtain/create a floor plan of the premises/property that needs to be protected by the electronic security equipment/systems

ASSESSMENT CRITERIA:

1.1	The learner is able to obtain a pre-drawn floor plan of the premises where the installation will take place or,
1.2	The learner is able to create a logical, effective plan of the intended installation.
1.3	The learner demonstrates competency in the overall understanding of the plan.
1.4	The Learner explains the floor plan layout and the interpretation of possible problems related to the intended installation
1.5	The Learner demonstrates the ability to read and understand a basic building floor plan

SPECIFIC OUTCOME 2:

Determine system/devices required as well as correct placement

ASSESSMENT CRITERIA:

2.1   Identify the correct system/devices for the required installation using the client's needs versus the system/device capabilities, as a guide.
2.2   Relevance of use of the selected system/devices is explained
2.3   The learner demonstrates a clear understanding of the system/device application, performance and limitations.
2.4   The learner effectively communicates the system/device placement with the client, considering the client's expectations versus the system/device capabilities and limitations as per the manufacturer specifications.

SPECIFIC OUTCOME 3:

Control stock

ASSESSMENT CRITERIA:

3.1   The learner is able to calculate and identify the quantity and type of stock from the plan
3.2   Stock control verification is done according to specific company procedures
3.3   Transport and storage of drawn/unused stock and material are in compliance with manufacturer and company requirements.
3.4   Installation manuals, programming worksheets and installation layout diagrams that form part of installation stock are controlled and secured at all times.

SPECIFIC OUTCOME 4:

Confirm power requirement

ASSESSMENT CRITERIA:

4.1   Power calculations are done and explained demonstrating a clear understanding of basic mathematical calculations using equipment specifications.
4.2   Cable length and type have been verified to ensure compatibility and maximum operation of devices
4.3   Availability of main power source for the system has been verified for correct application and safety of the installation.
4.4   Safety of self and others are ensured by following correct procedures to determine power availability.

RANGE : (The following variables cover all the specific outcomes)

Client must include:

- Owner; property agent; tenant; building supervisor; manager; project manager; agent; government and legal instrumentalities/agencies

Company requirements must be found in:

- Operations manuals; induction documentation; training materials; policy and procedures documents; insurance policy agreement; verbal or written instructions; client and company confidentiality requirements; quality assurance documents

Manufacturers' specifications must be found in:

- Printed instruction leaflets; operators manuals; equipment specifications; attached to the equipment; plans and diagrams; warranty documents

Work order will be written, and must include:

- Work schedule; completion dates; job requirements and tasks; specific client requirements; access to site and specific site requirements. OHS requirements and compliance with relevant legislation; company requirements; budget allocations

Basic building plan must include

- Municipal approved plans; Computer generated plans; hand drawn

Tools and equipment must include:

- Computer; software; test equipment; ladder; scaffold; scissor lift; hoist; batteries; personal protective equipment; communications equipment

Devices must include:

- Magnetic contact; Passive infra red detectors; glass break detectors; Seismic detectors; Radar detectors; Beams; Smoke detectors; wireless devices

Possible risks and hazards must include:

- Non-compliance with building codes and regulations; exposed electrical wiring; asbestos dust; live power; vermin; water; glass fibre; building debris; natural and other gas build-up

Security system must include:

- Electronic; mechanical; computerised; procedural

Safe operating procedures must include:

- Working safely around electrical wiring; cables and overhead power lines; working safely around tools and equipment; hazard recognition; emergency procedures; awareness of electrical hazards; follow confined spaces procedures; first aid
- Personal protective equipment required will be worn/fitted in accordance with company requirements; OHS and other legislation

Personal protective equipment must include:

- Safety boots, hard hat, protective eyewear, ear protection

Legislative considerations for identifying and diagnosing faults must include:

- OHS requirements and safe work practices

ACCREDITATION AND MODERATION OPTIONS:

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

NOTES:

1.　CRITICAL OUTCOMES

The following critical outcomes are addressed in this unit standard:

- Identify and solve problems when planning an installation, ensuring possible obstacles can be anticipated and alternative solutions / options implemented.
- Work effectively as member of a team when obtaining building plans from appropriate parties, thereby ensuring planning is based on accurate information.
- Organise and manage one and ones activities when planning installations, ensuring all possible scenarios' are taken into account and the work can happen on time.

- Collect, analyse, organise and critically evaluate information when interpreting work orders, manufacturers' specifications and building plans, ensuring accurate information is used in the planning process.
- Communicate effectively with client ensuring all parties are sure of exactly what is required.
- Demonstrate an understanding of the relationship between accurate, comprehensive planning, client satisfaction, quality and repeat business.
- Use science and technology effectively when calculating power requirements, ensuring equipment will function optimally.

2.   ESSENTIAL EMBEDDED KNOWLEDGE

- Cable characteristics.
- Types, functions and requirements of security equipment/system.
- Methods of cable testing.
- Cable identification.
- Cable and device attachment methods
- Earthing systems arrangements and requirements.
- Electrical concepts - voltage, current, resistance and impedance.
- Electrical connections.
- Types of electrical circuits.
- Circuit protection requirements.
- Cable handling requirements.
- Testing wiring systems.
- Circuit protection requirements.
- Computer software.
- Isolating and testing procedures.
- Reading and understanding basic building plans
- Technical terms.
- Company requirements.
- Company and client confidentiality requirements.
- OHS requirements and safe work practices.

3.   SUPPLEMENTARY INFORMATION:

Assessment Statement

Assessment is the process of collecting evidence and making judgments on the extent and nature of progress towards the achievement of the performance standard outlined in this unit.

Assessment against this unit of competency may involve any of the following techniques:

- Continuous assessment in an institutional setting that stimulates the conditions of performance describe in the elements, performance criteria and range of variables statement that make up the unit
- Continuous assessment in the workplace, taking into account the range of variables affecting performance
- Self-assessment on the same terms as those described above

- Simulated assessment or critical incident assessment, provided that the critical incident involves assessment against performance criteria and an evaluation of underpinning knowledge and skill required to achieve the required performance outcomes

Resources required for Assessment

- Client file and security system operation requirements for review.
- Work order.
- Tools, equipment and materials for cable installation.
- Manufacturers' device operating instructions.
- Communications equipment.
- Case studies.
- Criterion referenced assessment instructions.
- Relevant codes of practice.
- A suitable venue: either in the workplace or classroom.
- Access to a registered provider of assessment services.

UNIT STANDARDS JUSTIFICATION

LEVEL

Attribute	Level	Justification
Skills	3	Definite variety within critical stress, with drastic consequence.
Procedures	4	Familiar procedures apply but not repetitively
Context	3	An endless number of variations can and does occur.
Knowledge	5	Relevant theory is required to address different conditions that may occur.
Information Processing	4	Information is dynamically processed to constantly identify threat
Problem Solving	5	Discretion responsibility and reliability is required to execute the process effectively.
Orientation of activity	4	Follows instructions, works under supervision and must refer any abnormal conditions to the Supervisor, but must be prepared to act on discretion of need.
Application of Responsibility	4	Works under supervision and regular quality control inspection is required, though degree of responsibility is critical, and measurable by preservation of life as primary factor.
Orientation and scope of Responsibility	5	Responsible for own quality and quantity which can have an impact on others in the process

Average Level: **4.1**   **Actual Level Assigned:**   **4**

CREDITS

Total hours required by the learner to achieve the required outcomes:

Activity	Hours
Classroom learning	30
On-the-job learning	40
Self directed learning	10
Coaching required	20
Other	
TOTAL	**100**

CREDITS ACHIEVED: **10**

CORE UNIT STANDARDS IN NATIONAL CERTIFICATE SECURITY MANAGEMENT: ELECTRONIC SECURITY NQF LEVEL 4

TITLE: Installation of electronic security equipment/systems

LEVEL: 4

CREDITS: 35

FIELD: Law, Military Science and Security

SUBFIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

PURPOSE OF THE UNIT STANDARD:

This unit standard is for persons who must be able to successfully install electronic security equipment/systems

Benefit for society of this unit standard is that the person who completes this will contribute to safety in society.

A person credited with this unit standard will be able to:

- Prepare for installation
- Perform installation
- Clean up worksite

- Document installation where required

LEARNING ASSUMED TO BE IN PLACE:

It is assumed that learners wishing to attempt this unit standard have technical literacy, numeracy and communication skills equivalent to NQF level 3.

The following unit standards and / or equivalent competencies

- Proven competency in the Electronic security equipment/systems Wiring unit standard
- Proven competency in the Planning an installation of electronic security equipment/systems unit standard

The following knowledge, skills attitude and / or equivalent:

- Communication, including: liaison; customer service; report writing; consultation; interpersonal; listening; questioning; gaining feedback; giving information).
- Reading and interpreting plans and specifications.
- Relevant product knowledge
- Cable isolation, testing and tagging procedures.
- Computer literacy.
- Methodical organisation of work.
- Cable handling.
- Problem solving.
- Time management.
- Safe and efficient work practices.
- Power security equipment/system.
- Downloading and uploading information.
- Use of keypads and control panels.

RANGE STATEMENTS:

This unit standard applies to persons who will install electronic security equipment/systems.

This unit applies to extra-low voltage environments.

SPECIFIC OUTCOMES AND ASSESSMENT CRITERIA:

SPECIFIC OUTCOME 1:

Prepare for installation

ASSESSMENT CRITERIA:

1.1   The Learner has explained the work order and the required performance of the system.

1.2   Tools and equipment has been selected and checked for safe and efficient operation.

1.3   The relevance of tools and equipment used must be explained.

1.4   Equipment quantity and quality is checked and verified to ensure that the client's expectations are met

1.5   Correct procedures are followed to obtain required stock and materials

1.6   The layout of the installation is scrutinised and understood

1.7   Possible risks and hazards to installation are identified and managed according to job requirements, in accordance with company, manufacturer, OHS and other legislative requirements. The work area has been inspected and declared safe for installation.

SPECIFIC OUTCOME 2:

Perform installation

ASSESSMENT CRITERIA:

2.1   Method and thoroughness of cabling, back plate and housing installation inspection verified and explained.

2.2   Client requirement and manufacturer, company and industry standard and specifications of system and device installation have been met.

2.3   The installation has been quality checked and the system is operating as it was intended to.

2.4   All relevant safety measures have been observed and complied with.

SPECIFIC OUTCOME 3:

Clean up worksite

ASSESSMENT CRITERIA:

3.1   All tools and equipment are cleaned and stored in a secure and safe location.

3.2   Worksite is cleared, tidied and reinstated in accordance with company requirements.

3.3   Worksite is handed back to the client, ensuring that the client's expectations have been met.

SPECIFIC OUTCOME 4:

Document installation where required:

ASSESSMENT CRITERIA:

4.1   All required documentation is completed promptly and accurately, without omission, in accordance with company requirements and manufacturers' specifications.

4.2   The working time assigned to the installation has been adhered to.

4.3   Where required, system schematics, specifications and configuration are clearly and accurately adjusted to show detail of security equipment/system modifications, in accordance with company requirements.

4.4   Client confirmation of documentation is obtained where required, in accordance with company requirements.

4.5   Indemnity is included to protect interests of all parties where required.

4.6   Client equipment/system records are updated to ensure tractability of information is maintained

RANGE : (The following variables covers all the specific outcomes)

Client must include:

• Owner; property agent; tenant; building supervisor; manager; project manager; agent; government and legal instrumentalities/agencies

Company requirements must be found in:

• Operations manuals; induction documentation; training materials; policy and procedures documents; insurance policy agreement; verbal or written instructions; client and company confidentiality requirements; quality assurance documents

Manufacturers' specifications must be found in:

• Printed instruction leaflets; operators manuals; equipment specifications; attached to the equipment; plans and diagrams; warranty documents

Work order will be written, and must include:

- Work schedule; completion dates; job requirements and tasks; specific client requirements; access to site and specific site requirements. OHS requirements and compliance with relevant legislation; company requirements; budget allocations.

Tests must include:

- Testing cable, wiring and connections (continuity, resistance, earth leakage, voltage); walk test; coverage test; safety tests; calibration test; test for correct relaying of information/data; testing to specifications; detection test; alarm test; functional test

Tools and equipment must include:

- Computer; software; test equipment; ladder; scaffold; scissor lift; hoist; batteries; personal protective equipment; communications equipment

Hand Tools must include:

- Screw drivers; Hack saws; side cutters; various pliers; measuring tape; cutting knife; multimeter; hammer; files

Power Tools must include:

- Hand held drill; Angle grinder; Soldering iron; Lead Light; Welding machine.

Materials must include:

- Various cabling; Glue; Screws; Cable clips; Rivets; Trunking; Conduit; Double sided tape; Drill bits; Hole saws

Possible risks and hazards must include:

- Non-compliance with building codes and regulations; exposed electrical wiring; asbestos dust; live power; vermin; water; glass fibre; building debris; natural and other gas build-up

Electronic security equipment must include:

- Detection devices; audible and visual warning devices; cameras; monitors and control equipment; control panels; intercoms; wireless equipment; car alarms; electronic readers; electronic recognition controls; locks and locking systems; grills; lighting;

boom gates; turnstiles; bank pop up screens; biometrics; electric and mechanical fire safety and fire locking systems; power supplies; batteries; security doors and door controls

Security system must include:

- Electronic; mechanical; computerised; procedural

Safe operating procedures must include:

- Working safely around electrical wiring; cables and overhead power lines; working safely around tools and equipment; hazard recognition; emergency procedures; awareness of electrical hazards; follow confined spaces procedures; first aid
- Personal protective equipment required will be worn/fitted in accordance with company requirements; OHS and other legislation.

Personal protective equipment must include:

- Safety boots, hard hat, protective eyewear, ear protection

Legislative considerations for identifying and diagnosing faults must include:

- OHS requirements and safe work practices

ACCREDITATION AND MODERATION OPTIONS:

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

NOTES:

1. **CRITICAL OUTCOMES**

The following critical outcomes are addressed in this unit standard:

- Identify and solve problems when installing security systems/equipment, ensuring possible obstacles can be anticipated and alternative solutions / options implemented.
- Work effectively as member of a team when conducting the installation.
- Organise and manage oneself and ones activities when conducting installations, ensuring all possible scenarios' are taken into account and the work can happen on time.
- Collect, analyse, organise and critically evaluate information when interpreting work orders, manufacturers' specifications and building plans, ensuring accurate information is used in the installation process.
- Communicate effectively with client ensuring all parties are sure of exactly what is required.
- Demonstrate an understanding of the relationship between accurate, comprehensive installation, client satisfaction, quality and repeat business.
- Use science and technology effectively when installing systems/equipment, ensuring systems/equipment will function optimally.

2. ESSENTIAL EMBEDDED KNOWLEDGE

- Powering systems.
- Types, functions and requirements of security equipment/systems.
- Keypad and control panel types and functions.
- Methods of equipment/system testing.
- Cable identification.
- Earthing systems arrangements and requirements.
- Electrical concepts - voltage, current, resistance and impedance.
- Electrical connections.
- Types of electrical circuits.
- Circuit protection requirements.
- Cable handling requirements.
- Testing wiring systems.
- Test equipment uses.
- Equipment/system configurations and programs.
- Circuit protection requirements.
- Computer software.
- Isolating and testing procedures.
- Technical terms.
- Company requirements.
- Company and client confidentiality requirements.
- OHS requirements and safe work practices.

3. SUPPLEMENTARY INFORMATION:

Assessment Statement

Assessment is the process of collecting evidence and making judgments on the extent and nature of progress towards the achievement of the performance standard outlined in this unit.

Assessment against this unit of competency may involve any of the following techniques:

- Continuous assessment in an institutional setting that stimulates the conditions of performance describe in the elements, performance criteria and range of variables statement that make up the unit
- Continuous assessment in the workplace, taking into account the range of variables affecting performance
- Self-assessment on the same terms as those described above
- Simulated assessment or critical incident assessment, provided that the critical incident involves assessment against performance criteria and an evaluation of underpinning knowledge and skill required to achieve the required performance outcomes

Resources required for Assessment

- Client file and security system operation requirements for review.
- Work order.
- Tools, equipment and materials for cable installation.
- Manufacturers' device operating instructions.
- Communications equipment.
- Case studies.
- Criterion referenced assessment instructions.
- Relevant codes of practice.
- A suitable venue: either in the workplace or classroom.
- Access to a registered provider of assessment services.

UNIT STANDARDS JUSTIFICATION

LEVEL

Attribute	Level	Justification
Skills	5	Definite variety within critical stress, with drastic consequence.
Procedures	4	Familiar procedures apply but not repetitively
Context	3	An endless number of variations can and does occur.
Knowledge	5	Relevant theory is required to address different conditions that may occur.
Information Processing	4	Information is dynamically processed to constantly identify threat
Problem Solving	5	Discretion responsibility and reliability is required to execute the process effectively.
Orientation of activity	4	Follows instructions, works under supervision and must refer any abnormal conditions to the Supervisor, but must be prepared to act on discretion of need.
Application of Responsibility	4	Works under supervision and regular quality control inspection is required, though degree of responsibility is critical, and measurable by preservation of life as primary factor.
Orientation and scope of Responsibility	4	Responsible for own quality and quantity which can have an impact on others in the process

Average Level: 4.2   **Actual Level Assigned:**   4

CREDITS

Total hours required by the learner to achieve the required outcomes:

Activity	Hours
Classroom learning	110
On-the-job learning	160
Self directed learning	30
Coaching required	50
Other	
TOTAL	**350**

CREDITS ACHIEVED: 35

CORE UNIT STANDARDS IN NATIONAL CERTIFICATE SECURITY MANAGEMENT: ELECTRONIC SECURITY NQF LEVEL 4.

TITLE: Installation of electronic security equipment/systems wiring

LEVEL: 4

CREDITS: 15

FIELD: Law, Military Science and Security

SUBFIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

PURPOSE OF THE UNIT STANDARD:

This unit standard is for persons who must be able to successfully install suitable cabling, junction boxes, mounting plates and equipment enclosures at premises/property to enable the correct installation of electronic security equipment/systems.

Benefit for society of this unit standard is that the person who completes this will contribute to safety in society.

A person credited with this unit standard will be able to :

- Identify cable and determine suitability for application
- Operate basic hand tools
- Operate basic power tools

- Correct use of handheld drilling apparatus
- Correct use of soldering apparatus
- Secure cabling from point of origin to termination point
- Mount devices

LEARNING ASSUMED TO BE IN PLACE:

It is assumed that learners wishing to attempt this unit standard have technical literacy, numeracy and communication skills equivalent to NQF level 3

The following knowledge, skills attitude and / or equivalent:

- Communication, including: liaison; customer service; report writing; consultation; interpersonal; listening; questioning; gaining feedback; giving information).
- Reading and interpreting plans and specifications.
- Selection and use of relevant testing tools and equipment.
- Cable isolation, testing and tagging procedures.
- Computer literacy.
- Methodical organisation of work.
- Cable handling.
- Problem solving.
- Time management.
- Safe and efficient work practices.

RANGE STATEMENTS:

This unit standard applies to persons who will install cabling, junction boxes, mounting plates and equipment enclosures at a premises/property to enable the correct installation of electronic security equipment/systems

This unit applies to extra-low voltage environments.

SPECIFIC OUTCOMES AND ASSESSMENT CRITERIA:

SPECIFIC OUTCOME 1:

Identify cable and determine suitability for application

ASSESSMENT CRITERIA:

1.1   The learner has explained the method and reason for selecting a specific cable type for an installation considering the location where the cable will be installed as well as the required performance of the system and or devices to be used.

1.2   A clear understanding of the different applications of different types of wiring has been demonstrated.

1.3   Possible risks and hazards the cabling may be exposed to has been identified and corrective measures has been considered.-

1.4   Identify compatibility between attachment method and cable type

SPECIFIC OUTCOME 2:

Operate basic hand tools

ASSESSMENT CRITERIA

2.1   Relevance of use of the selected tools has been explained.

2.2   Safety and serviceability tests have been conducted and explained.

2.3   Hand tools has been successfully and effectively operated.

2.4   Basic health and safety rules has been observed, considering the use of dust masks, protective eye wear and stability of stepladders.

SPECIFIC OUTCOME 3:

Operate basic power tools

ASSESSMENT CRITERIA

3.1   Tools and equipment selected are suitable and relevant for the installation of cabling.

3.2   Tools and equipment selected are inspected for safety and serviceability.

3.3   Ensure the availability of a suitable power source at the place of installation.

3.4   Ensure the suitability for the use of power tools at the location of the installation ensuring that it is not a hazardous area for the use of power tools.

3.5   Observation of general health and safety requirements.

SPECIFIC OUTCOME 4:

Correct use of handheld drilling apparatus

ASSESSMENT CRITERIA

4.1   The reason for selecting a specific drilling apparatus has been explained.

4.2   The relevance of the cutting tool selected has been explained, considering the surface that needs to be drilled.

4.3   Method for finding possible hidden hazards under the drilling surface has been explained and demonstrated.

4.4   The required drill hole diameter, depth and angle has been achieved using the correct drilling techniques.

4.5   Basic health and safety rules has been observed, considering the use of dust masks, protective eye wear, stability of stepladders, location of power extension cords etc.

SPECIFIC OUTCOME 5:

Correct use of soldering apparatus

ASSESSMENT CRITERIA

5.1   The reason for selecting a specific soldering apparatus has been explained.

5.2   The effectiveness of the soldering tip selected has been explained, considering the cable type that needs to be joined/connected.

5.3   The process of verification of the effectiveness of the connection are done and explained.

5.4   Basic health and safety rules has been observed, considering the use of dust masks, protective eye wear, protection of the surroundings from the soldering apparatus tip, location of power extension cords etc.

SPECIFIC OUTCOME 6:

Secure cabling from point of origin to termination point

ASSESSMENT CRITERIA

6.1   The reason and effectiveness for selecting a specific attachment method and placement of the cable has been explained.

6.2   Plan and execute the correct placement of the cable to ensure maximum operation of devices to be connected to the cable.

6.3   Communicate the desired cable placement and attachment methods to the client and ensure that this meets with the client's requirements and expectations.

6.4   Verification of the learner's knowledge of the cable's limitations as per the manufacturer specifications.

6.5   Basic health and safety rules have been observed, considering the use of glue in confined spaces.

SPECIFIC OUTCOME 7:

Mounting of devices

ASSESSMENT CRITERIA

7.1   Ensure the manufacturer's specifications are adhered to when mounting devices.

7.2   Plan and execute the correct placement of the devices to ensure it's maximum operation.

7.3   Communicate the desired device placement and attachment methods to the client and ensure that this meets with the client's requirements and expectations.

7.4   Be aware of the device's limitations as per the manufacturer specifications.

7.5   Observe basic health and safety rules

7.6   The reason and effectiveness for selecting a specific attachment method and placement of the cable has been Explained.

7.7   Basic health and safety rules has been observed, considering the use of glue in confined spaces.

RANGE: (The following variables cover all the specific outcomes)

Client must include:

- Owner; property agent; tenant; building supervisor; manager; project manager; agent; government and legal instrumentalities/agencies.

Company requirements must be found in:

- Operations manuals; induction documentation; training materials; policy and procedures documents; insurance policy agreement; verbal or written instructions; client and company confidentiality requirements; quality assurance documents.

Manufacturers' specifications must be found in:

- Printed instruction leaflets; operators manuals; equipment specifications; attached to the equipment; plans and diagrams; warranty documents.

Work order will be written, and must include:

- Work schedule; completion dates; job requirements and tasks; specific client requirements; access to site and specific site requirements. OHS requirements and compliance with relevant legislation; company requirements; budget allocations.

Tests must include:

- Testing cable, wiring and connections (continuity, resistance, earth leakage, voltage); walk test; coverage test; safety tests; calibration test; test for correct relaying of information/data; testing to specifications; detection test; alarm test; functional test.

Tools and equipment must include:

- Computer; software; test equipment; ladder; scaffold; scissor lift; hoist; batteries; personal protective equipment; communications equipment

Hand Tools must include:

- Screw drivers; Hack saws; side cutters; various pliers; measuring tape; cutting knife; multimeter; hammer; files

Power Tools must include:

- Hand held drill; Angle grinder; Soldering iron; Lead Light; Welding machine.

Materials must include:

- Various cabling; Glue; Screws; Cable clips; Rivets; Trunking; Conduit; Double sided tape; Drill bits; Hole saws

Possible risks and hazards must include:

- Non-compliance with building codes and regulations; exposed electrical wiring; asbestos dust; live power; vermin; water; glass fibre; building debris; natural and other gas build-up.

Electronic security equipment must include:

- Detection devices; audible and visual warning devices; cameras; monitors and control equipment; control panels; intercoms; wireless equipment; car alarms; electronic readers; electronic recognition controls; locks and locking systems; grills; lighting; boom gates; turnstiles; bank pop up screens; biometrics; electric and mechanical fire safety and fire locking systems; power supplies; batteries; security doors and door controls.

Security system must include:

- Electronic; mechanical; computerised; procedural

Safe operating procedures must include:

- Working safely around electrical wiring; cables and overhead power lines; working safely around tools and equipment; hazard recognition; emergency procedures; awareness of electrical hazards; follow confined spaces procedures; first aid.

- Personal protective equipment required will be worn/fitted in accordance with company requirements; OHS and other legislation.

Personal protective equipment must include:

- Safety boots, hard hat, protective eyewear, ear protection

Legislative considerations for identifying and diagnosing faults must include:

- OHS requirements and safe work practices

ACCREDITATION AND MODERATION OPTIONS:

1. Anyone assessing a learner against this unit standard must be registered as an assessor with POSLEC SETA ETQA.

2. Any institution offering learning that will enable achievement of this unit standard must be accredited as a provider through POSLEC SETA ETQA.

3. Moderation of assessment will be overseen by the ETQA according to the moderation guidelines in the relevant qualification and the agreed POSLEC SETA ETQA procedures.

NOTES:

1. CRITICAL OUTCOMES

The following critical outcomes are addressed in this unit standard:

*   Identify and solve problems creatively to plan the most appropriate placement of the devices, taking into account possible structural or aesthetical stumbling blocks.
*   Organise and manage oneself and ones activities when preparing to install, ensuring all materials and equipment needed are selected, inspected and set out ready for use.
*   Collect, analyse, organise and critically evaluate information with regard to structural layout, type of system installed and manufacturers' specifications, ensuring all decisions made are based on accurate and relevant facts.
*   Communicate effectively when discussing placement and mounting positions with client ensuring all expectations and requirements are met.
*   Demonstrate an understanding of the correct installation of wiring and mounting of devices on overall client satisfaction and safety.
*   Use science and technology effectively when selecting and using manual and power tools, ensuring all manufacturers' specifications and safety measures are adhered to.

2. ESSENTIAL EMBEDDED KNOWLEDGE

*   Cable characteristics.
*   Power and hand tool use and operation
*   Types, functions and requirements of security equipment/system.
*   Methods of cable testing.
*   Cable identification.
*   Cable and device attachment methods
*   Earthing systems arrangements and requirements.
*   Electrical concepts - voltage, current, resistance and impedance.
*   Electrical connections.
*   Types of electrical circuits.
*   Circuit protection requirements.
*   Cable handling requirements.
*   Testing wiring systems.
*   Circuit protection requirements.
*   Computer software.
*   Isolating and testing procedures.
*   Technical terms.
*   Company requirements.
*   Company and client confidentiality requirements.

- OHS requirements and safe work practices.

3. SUPPLEMENTARY INFORMATION:

Assessment Statement

Assessment is the process of collecting evidence and making judgments on the extent and nature of progress towards the achievement of the performance standard outlined in this unit.

Assessment against this unit of competency may involve any of the following techniques:

- Continuous assessment in an institutional setting that stimulates the conditions of performance describe in the elements, performance criteria and range of variables statement that make up the unit

- Continuous assessment in the workplace, taking into account the range of variables affecting performance

- Self-assessment on the same terms as those described above

- Simulated assessment or critical incident assessment, provided that the critical incident involves assessment against performance criteria and an evaluation of underpinning knowledge and skill required to achieve the required performance outcomes

Resources required for Assessment

- Client file and security system operation requirements for review.
- Work order.
- Tools, equipment and materials for cable installation.
- Manufacturers' device operating instructions.
- Communications equipment.
- Case studies.
- Criterion referenced assessment instructions.
- Relevant codes of practice.
- A suitable venue: either in the workplace or classroom.
- Access to a registered provider of assessment services.

UNIT STANDARDS JUSTIFICATION

LEVEL

Attribute	Level	Justification
Skills	3	Definite variety within critical stress, with drastic consequence.
Procedures	4	Familiar procedures apply but not repetitively
Context	4	An endless number of variations can and does occur.
Knowledge	4	Relevant theory is required to address different conditions that may occur.
Information Processing	4	Information is dynamically processed to constantly identify threat
Problem Solving	3	Discretion responsibility and reliability is required to execute the process effectively.
Orientation of activity	3	Follows instructions, works under supervision and must refer any abnormal conditions to the Supervisor, but must be prepared to act on discretion of need.
Application of Responsibility	4	Works under supervision and regular quality control inspection is required, though degree of responsibility is critical, and measurable by preservation of life as primary factor.
Orientation and scope of Responsibility	4	Responsible for own quality and quantity which can have an impact on others in the process

Average Level: 3.7   Actual Level Assigned: 4

CREDITS

Total hours required by the learner to achieve the required outcomes:

Activity	Hours
Classroom learning	50
On-the-job learning	50
Self directed learning	25
Coaching required	25
Other	
TOTAL	**150**

CREDITS ACHIEVED: 15

CORE UNIT STANDARDS IN NATIONAL DIPLOMA SECURITY MANAGEMENT: ELECTRONIC SECURITY NQF LEVEL 5.

TITLE: Maintain security equipment/systems

LEVEL: 5

CREDITS: 20

FIELD: Law, Military Science and Security

SUBFIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

PURPOSE OF THE UNIT STANDARD:

This unit standard is for persons to successfully maintain an electronic security equipment/systems

Benefit for society of this unit standard is that the person who completes this will contribute to safety in society.

A person credited with this unit standard will be able to :

- Prepare for maintenance
- Conduct maintenance
- Clean up worksite
- Document maintenance where required

LEARNING ASSUMED TO BE IN PLACE:

It is assumed that learners wishing to attempt this unit standard have technical literacy, numeracy and communication skills equivalent to NQF level 4.

The following unit standards and / or equivalent competencies

- Planning of electronic security system/equipment installation
- Installation of electronic security systems/equipment wiring
- Installation of electronic security system/equipment
- Programming of electronic security systems/equipment.
- Testing of electronic security systems/equipment.
- Handing over of installed electronic security systems/equipment
- Fault finding in electronic security systems/equipment

The following knowledge, skills attitude and / or equivalent:

- Communication, including: liaison; customer service; report writing; consultation; interpersonal; listening; questioning; gaining feedback; giving information.
- Reading and interpreting specifications, charts and diagrams.
- Methodical organisation of work
- Use appropriate test equipment
- Equipment/system maintenance
- Identifying cable
- Cable handling
- 'Fix and make good' practices
- Use hand tools
- Reading/interpreting a multimeters
- Fault finding
- Work in confined spaces
- Safe and efficient work practices

RANGE STATEMENTS:

- This unit standard applies to persons conducting maintenance work on electronic security systems/equipment without guidance and supervision.
- This unit applies to extra-low voltage environments
- Maintenance may be made remotely or on site.

SPECIFIC OUTCOMES AND ASSESSMENT CRITERIA:

SPECIFIC OUTCOME 1:

Prepare for maintenance

ASSESSMENT CRITERIA:

1.1 Work order is reviewed, and all maintenance requirements are clearly identified.

1.2 Tools, equipment and materials required for work are obtained and checked to ensure safe and efficient operation.

1.3 Possible risks and hazards to maintenance of security system are identified and managed according to job requirements, in accordance with company, OHS and other legislative requirements.

1.4 Historical data on repairs/maintenance of the system is obtained to determine any specific areas that would require attention.

SPECIFIC OUTCOME 2:

Conduct maintenance

ASSESSMENT CRITERIA

2.1 Equipment/system requiring maintenance is accessed accordance with manufacturers' specifications, and minimises disruption to client or property.

2.2 Maintenance conducted is appropriate as to the type of equipment/system being maintained, and is in accordance with manufacturers' specifications, company requirements and OHS and other legislation.

2.3 Equipment is cleaned where necessary to ensure safe and effective operation in accordance with manufacturers' specifications.

2.4 A visual inspection is conducted to pinpoint any damage, obstruction, or component wear.

2.5 An operational check is conducted to determine appropriate operation of equipment/system.

2.6 Where fault is identified, client and relevant personnel are notified promptly, in accordance with company requirements.

2.7 Where required, clear communication is maintained with monitoring station during modification.

2.8 Tools and equipment required for maintenance are correctly identified, selected and used in accordance with manufacturers; specifications, and OHS and other legislation.

2.9 Work is conducted using safe work practices in accordance with company requirements, OHS and other legislation.

2.10 Maintenance is completed in a timely fashion in accordance with work schedule and company requirements.

2.11   On completion of repairs, equipment/system is tested to confirm correct operation and recommissioned to the client where required.

SPECIFIC OUTCOME 3:

Clean up worksite

ASSESSMENT CRITERIA

3.1   All tools and equipment are cleaned and stored in accordance with manufacturers' specifications and company requirements.

3.2   Worksite is cleared, tidied and reinstated in accordance with client and company requirements.

3.3   Good housekeeping principles were applied at the work site.

3.4   All waste and packaging are disposed of in accordance with health and safety standards.

SPECIFIC OUTCOME 4:

Document maintenance where required

ASSESSMENT CRITERIA

1.1   All required documentation is completed promptly and accurately in accordance with company requirements and manufacturers' specifications.

1.2   Client confirmation of documentation is obtained where required.

1.3   Indemnity is included to protect interest of all parties where required.

1.4   Securing of documentation after maintenance verifies client privacy and security.

RANGE: (The range of variables applies to all outcomes)

Work order will be written, and must include:

- Work schedule; completion dates; job requirements and tasks; specific client requirements; Access to site and specific site requirements; resource requirements; OHS requirements and compliance with relevant legislation; company requirements; budget allocations.

Maintenance requirements must include:

- Cleaning; inspection; lubrication; identification of worn parts; confirm operation; adjustments; backups; changing user codes; key cutting; replace worn parts.

Company requirements must be found in:

- Operations manuals; induction documentation; training materials; policy and procedures documents; insurance policy agreements; verbal or written instructions; client and company confidentiality requirements; quality assurance documents.

Electronic security equipment must include:

- Detection devices, audible and visual warning devices; cameras; monitors and control equipment; control panels; intercoms; wireless equipment; car alarms; electronic readers; electronic recognition controls; locks and locking systems; grills; lighting; boom gates; turnstiles; bank pop up screens; biometrics; electric and mechanical fire safety and fire locking systems; power supplies; batteries; security doors and door controls.

Electronic security system must include:

- Electronic; mechanical; computerised; procedural

Client must include:

- Owner; property agent; tenant ; building supervisor; manager; project manager; agent; government and legal instrumentalities/agencies

Tools and equipment must include:

- Computer; software; backup disks; test equipment; multimeters; hand tools; fixing tools; strippers; router; power saw; hand tools; file; drill; lock pick; pick gun; followers; glass break tester; spirit level; soldering iron; welder; crimp tools; IDC tools; ladder; hoist; drop sheet; batteries; personal protective equipment; communications equipment

Materials must include:

- Resistors; parts and components; wire and cable; fixings; solder; insulation tape; springs; pins; oil; silicon; grease; glass cleaner/lens cleaner; glue; paint; patch materials; electronic components; sealing compounds; cleaning compounds.

Access to equipment/system must involve:

- Use of access code; disablement of system; removal of housing; access token; keys; phone line access; modem.

Possible risks and hazards must include:

- Non-compliance with building codes and regulations; exposed electrical wiring; asbestos; dust; noise; live power; vermin; water; glass fibre; building debris; natural and other gas build-up.

Disruption to client or property must include:

- Security; time; access; noise; use of communications equipment; business operations

Manufacturers' specifications must be found in:

- Printed instruction leaflets; operations manuals; equipment specifications; attached to the equipment; plans and diagrams; warranty documents

Documentation must include:

- Completion of work log; equipment/system problems/faults; warranty conditions and allowances; recommendation for repairs; operational checks and maintenance conducted; testing and commissioning results; parts and components replaced; materials used; recommendations for future operation and maintenance; costing.

Client confirmation of documentation will be written, and must include:

- Sign-off of work completed; signature; letter of verification or authorisation.

Indemnity will be written, and must include:

- Company identification information; liability terms and conditions; limits of system; exclusions; terms of trade; suitable sign-off arrangements by company and client; copyright requirements

Safe operating procedures must include:

- Working safely around electrical wiring, cables and overhead power lines; working safely around tools and equipment; hazards recognition; emergency procedures; awareness of electrical hazards, follow confined spaces procedures; first aid.
- Personal protective equipment required will be worn/fitted in accordance with company requirements; OHS and other legislation.

Personal protective equipment must include:

- Masks; safety boots; head protection; safety glasses; knee pads; gloves; ear muffs; witches hats; flashing lights; warning signs and tapes; fire extinguisher; first aid kit.

Legislative considerations for maintaining security equipment/system must include:

- OHS requirements.

ACCREDITATION AND MODERATION OPTIONS:

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

NOTES:

1.   CRITICAL OUTCOMES

The following critical outcomes are addressed in this unit standard:

- Identify and solve problems by making sure correct tools are selected for specific types of maintenance activities
- Work effectively in a team by notifying all relevant personnel
- Organise and manage oneself and ones activities by carrying out preventative maintenance, thereby ensuring no crisis arises
- Collect, analyse, organise and critically evaluate information when inspecting systems, making sure maintenance activities are based on accurate data.
- Communicate effectively in writing, by completing all relevant documentation

2.   **ESSENTIAL EMBEDDED KNOWLEDGE**

- Principals of operation of security equipment/systems
- Security equipment/system maintenance requirements
- Technical terms
- Common equipment/system faults
- Tests to confirm equipment/system operation
- Building construction methods and types
- Electrical concepts
- Cable handling requirements
- Earthing systems arrangements and requirements
- Cable identification
- Confined space procedures
- Company requirements
- Company and client confidentiality requirements.
- OHS requirements and safe work practices

3.   **SUPPLEMENTARY INFORMATION:**

Assessment Statement

Assessment is the process of collecting evidence and making judgments on the extent and nature of progress towards the achievement of the performance standard outlined in this unit.

Assessment against this unit of competency may involve any of the following techniques:

- Continuous assessment in an institutional setting that stimulates the conditions of performance describe in the elements, performance criteria and range of variables statement that make up the unit.
- Continuous assessments in the workplace, taking into account the range of variables affecting performance.
- Self-assessment on the same terms as those described above
- Simulated assessment or critical incident assessment, provided that the critical incident involves assessment against performance criteria and an evaluation of underpinning knowledge and skill required to achieve the required performance outcomes.

Guidance of assessment

Evidence of competency is best obtained by observing activities in the field and in the office and reviewing fault finding in security equipment/system under normal industry operating conditions. If this is not practicable, observations in realistic simulated environments may be substituted.

Evidence of competency will include:

- Consults client and assesses operational data to identify and clarify problem.
- Ascertains normal performance.
- Makes an assessment of likelihood of fault existing.
- Establishes context and background information (site variables and historical information)
- Determines and ranks likely causes of fault.
- Applies checks and tests (including: visually inspects likely fault; checks connections; parts and components)
- Uses appropriate tools and equipment.
- Applies fault finding methodology (including: uses methodical approach; progressively isolates fault; verifies continued existence of problem; reviews all available information; identifies fault in shortest time possible)
- Documents fault diagnosis and obtains client confirmation of documentation where required.

Resources required for Assessment

- Client file and security system operation information for review
- Work order
- Equipment/systems with faults for diagnosis
- Testing tools, equipment and materials for fault finding
- Manufacturers' operations and fault finding instructions
- Communications equipment
- Case studies
- Criterion referenced assessment instruments
- Relevant codes of practice
- A suitable venue: either in the work place or classroom
- Access to a registered provider of assessment services

UNIT STANDARDS JUSTIFICATION

LEVEL

Attribute	Level	Justification
Skills	4	Definite variety within critical stress, with drastic consequence.
Procedures	5	Familiar procedures apply but not repetitively
Context	4	An endless number of variations can and does occur.
Knowledge	6	Relevant theory is required to address different conditions that may occur.
Information Processing	5	Information is dynamically processed to constantly identify threat
Problem Solving	6	Discretion responsibility and reliability is required to execute the process effectively.
Orientation of activity	5	Follows instructions, works under supervision and must refer any abnormal conditions to the Supervisor, but must be prepared to act on discretion of need.
Application of Responsibility	5	Works under supervision and regular quality control inspection is required, though degree of responsibility is critical, and measurable by preservation of life as primary factor.
Orientation and scope of Responsibility	5	Responsible for own quality and quantity which can have an impact on others in the process

Average Level: 5   Actual Level Assigned: 5

CREDITS

Total hours required by the learner to achieve the required outcomes:

Activity	Hours
Classroom learning	60
On-the-job learning	90
Self directed learning	20
Coaching required	30
Other	
TOTAL	200

CREDITS ACHIEVED: 20

CORE UNIT STANDARDS IN NATIONAL DIPLOMA SECURITY MANAGEMENT: ELECTRONIC SECURITY NQF LEVEL 5.

TITLE: Fault Finding in electronic security systems/equipment

LEVEL: 5

CREDITS: 25

FIELD: Law, Military Science and Security

SUBFIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

PURPOSE OF THE UNIT STANDARD:

This unit standard is for persons to successfully identify and diagnose faults in electronic security equipment/systems

Benefit for society of this unit standard is that the person who completes this will contribute to safety in society.

A person credited with this unit standard will be able to :

- Identify and clarify nature of problem
- Determine and rank likely causes of fault
- Apply checks and tests
- Use appropriate tools and equipment where required

- Apply fault finding methodology
- Document diagnosis of fault where required

LEARNING ASSUMED TO BE IN PLACE:

It is assumed that learners wishing to attempt this unit standard have technical literacy, numeracy and communication skills equivalent to NQF level 4.

The following unit standards and / or equivalent competencies

- Planning of electronic security system/equipment installation
- Installation of electronic security systems/equipment wiring
- Installation of electronic security system/equipment
- Programming of electronic security systems/equipment.
- Testing of electronic security systems/equipment.
- Handing over of installed electronic security systems/equipment

The following knowledge, skills attitude and / or equivalent:

- Communication, including: liaison; customer service; report writing; consultation; interpersonal; listening; questioning; gaining feedback; giving information
- Reading and interpreting specifications, charts and diagrams
- Methodical organisation of work
- Problem solving
- Trouble shooting
- Flow charting systems
- Basic logic and lateral thinking
- Use appropriate test equipment
- Use hand tools
- Identifying cable
- Cable handling
- "Fix and make good" practices
- Soldering
- Welding
- Drilling
- Reading/interpreting a multimeter
- Safe and efficient work practices

RANGE STATEMENTS:

- This unit standard applies to persons conducting faultfinding work on electronic security systems/equipment without guidance and supervision.
- This unit applies to extra-low voltage environments
- Fault identification and diagnosis may be made remotely or on site.

SPECIFIC OUTCOMES AND ASSESSMENT CRITERIA:

SPECIFIC OUTCOME 1:

Identify and clarify nature of problem

ASSESSMENT CRITERIA:

1.1   The learner has demonstrated a clear understanding of the assessment of system data to identify a fault.

1.2   Effective communication skills have been employed to extract information from the client.

1.3   The normal performance and functions of the system is understood

1.4   Likelihood of an equipment/system fault existing is assessed

1.5   Establish context and background information

1.6   Site variables are determined to enable a full assessment of the fault context.

SPECIFIC OUTCOME 2:

Determine and rank likely causes of fault

ASSESSMENT CRITERIA:

2.1   Most probable causes of fault and determined from operational data and historical information where available.

2.2   Ranking of causes work from system wide problems to specific problems where relevant to fault.

2.3   Likely causes are ranked in order of probability to ensure a methodical approach to fault identification is used.

2.4   The Learner has demonstrated a clear understanding of the process of elimination, in order to find and rectify a fault on the system.

SPECIFIC OUTCOME 3:

Apply checks and tests.

ASSESSMENT CRITERIA:

3.1   The Learner has identified the continued existence of the problem.

3.2   Visual inspection of likely fault is undertaken where required

3.3   All parts, devices and connections have been inspected and checked for required standard of operation as per the manufacturer specification

3.4   Historical information of past performance and operational data has been obtained, scrutinised and understood.

SPECIFIC OUTCOME 4:

Use appropriate tools and equipment where required

ASSESSMENT CRITERIA:

4.1   Tools and equipment required to determine equipment/system fault are obtained.

4.2   Tools and equipment are in correct operating order to ensure accuracy in testing and diagnosis.

4.3   Tools and equipment are used in accordance with manufacturers' specifications and checked to be in safe working order.

4.4   Safety of self and others ensured through proper handling of tools and equipment in accordance with standard safe handling procedures .

SPECIFIC OUTCOME 5:

Apply fault finding methodology

ASSESSMENT CRITERIA:

5.1   Approach to fault identification is methodical, safe and suitable for equipment/system problem type.

5.2   Fault is progressively isolated to remove likely variables from assessment.

5.3   Continued existence of problem is verified regularly.

5.4   All available information is reviewed to identify likely solutions.

5.5   Fault is identified in the shortest time possible, minimising costs and disruption to the client.

SPECIFIC OUTCOME 6:

Document diagnosis of fault where required

ASSESSMENT CRITERIA:

6.1   All required documentation is completed promptly and accurately in accordance with company requirements.

6.2   Documentation includes specific details of fault diagnosis.

6.3   Client confirmation of documentation is obtained where required.

6.4   Indemnity is included to protect interests of all parties where required.

RANGE : (The range of variables applies to all outcomes)

Faults must be:

- Electronic' software; mechanical; procedural; operational misuse; environmental; previous installation

Client must include:

- Owner; property agent; tenant; building supervisor; manager; project manager; agent; government and legal instrumentalities/agencies

Electronic security equipment must include:

- Detection devices; audible and visual warning devices; cameras; monitors and control equipment; control panels; intercoms; wireless equipment; car alarms; electronic readers; electronic recognition controls; locks and locking systems; grills; lighting; boom gates; turnstiles; bank pop up screen; biometrics; electric and mechanical fire safety and fire locking systems; power supplies, batteries; security doors and door controls

Electronic security system must include:

- Electronic; mechanical; computerised; procedural

Operational data must be found in:

- Central monitoring station records; maintenance documentation; manufacturers' specifications; visual inspection; software records; backups

Information on normal performance and functions of equipment must be found in:

- Manufacturers' specifications; equipment manuals; job specifications

Site variables must include:

- Equipment/system usage; environmental conditions; building structures; client habits

Historical information of past performance must be found in:

- Installation records; client records; central station records; site logs; alarm history; maintenance and repair documentation; product releases; manufacturers' specifications; job specifications; system manufacture

Visual inspection must include:

- Inspection of equipment/system malfunctioning; inspection of parts and components; inspection of mechanisms; inspection of connectors; inspection using computer tools. Client demonstration; environmental assessment

Tools and equipment must include:

- Computer; software; test equipment; multimeters; hand tools; fixing tools; strippers; router; power saw; hand tools; file; drill; followers; glass break tester; spirit level; soldering iron; welder; crimp tools; IDC tools; ladder; hoist; personal protective equipment; communications equipment

Materials must include:

- Computer disks

Manufacturers' specifications must be found in:

- Printed instruction leaflets; operations manuals; equipment specifications; attached to the equipment; plans and diagrams; warranty documents

Information must include:

- Manufacturers' specifications; historical information of past performance; site variables; operational data

Documentation must include:

- Completion of work log; equipment/system problem; fault diagnosis; warranty conditions and allowances; recommendation for repair; circuit diagrams and flow charts; keying plans

Client confirmation of documentation will be written, and must include:

- Sign-off of work completed; signature; letter of verification or authorisation

Indemnity will be written, and must include:

- Company identification information; liability terms and conditions; limits of system; exclusions; terms of trade; suitable sign-off arrangements by company and client; copyright requirements

Safe operating procedures must include:

- Working safely around electrical wiring, cables and overhead power lines; working safely around tools and equipment; hazard recognition; emergency procedures; awareness of electrical hazards; follow confined spaces procedures; first aid
- Personal protective equipment required will be worn/fitted in accordance with company requirements, OHS and other legislation

Personal protective equipment must include:

- Masks; safety boots; head protection; safety glasses; knee pads; gloves; ear muffs; witches hats; flashing lights; warning signs and tapes; fire extinguisher; first aid kit

Legislative considerations for repairing security equipment/system must include:

- OHS requirements and safe work practices

ACCREDITATION AND MODERATION OPTIONS:

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

NOTES:

1.   CRITICAL OUTCOMES

The following critical outcomes are addressed in this unit standard:

- Identify and solve problems when doing fault fining, making sure all problems are detected and appropriately solved
- Organise and manage oneself and ones activities ensuring fault finding is done in a planned and organised manner
- Collect, analyse, organise and critically evaluate information on all aspects of installation, ensuring faults identified are rectified based on accurate and complete data
- Communicate effectively in writing, by completing all necessary documentation related to fault fining and handing over to appropriate parties.
- Use science and technology effectively when making diagnosis, ensuring faults are correctly fixed.

2.   ESSENTIAL EMBEDDED KNOWLEDGE

- Types, functions and specifications of security equipment/systems
- Principles of operation of security equipment/system
- Data transmissions networks
- Operating systems
- Technical terms
- Basics of circuit diagrams
- Electrical connections
- Common test equipment
- Electrical concepts - voltage, current, resistance and impedance
- Cable handling requirements
- Earthing systems arrangements and requirements
- Cable identification
- Fault finding techniques
- Common equipment/system faults
- Building construction methods and types
- Requirements for installation of security systems
- Company requirements
- Company and client confidentiality requirements
- OHS requirements and safe work practices

3.   SUPPLEMENTARY INFORMATION:

Assessment Statement

Assessment is the process of collecting evidence and making judgments on the extent and nature of progress towards the achievement of the performance standard outlined in this unit.

Assessment against this unit of competency may involve any of the following techniques:

- Continuous assessment in an institutional setting that stimulates the conditions of performance describe in the elements, performance criteria and range of variables statement that make up the unit.
- Continuous assessments in the workplace, taking into account the range of variables affecting performance.
- Self-assessment on the same terms as those described above
- Simulated assessment or critical incident assessment, provided that the critical incident involves assessment against performance criteria and an evaluation of underpinning knowledge and skill required to achieve the required performance outcomes.

Guidance of assessment

Evidence of competency is best obtained by observing activities in the field and in the office and reviewing fault finding in security equipment/system under normal industry operating conditions. If this is not practicable, observations in realistic simulated environments may be substituted.

Evidence of competency will include:

- Consults client and assesses operational data to identify and clarify problem.
- Ascertains normal performance.
- Makes an assessment of likelihood of fault existing.
- Establishes context and background information (site variables and historical information)
- Determines and ranks likely causes of fault.
- Applies checks and tests (including: visually inspects likely fault; checks connections; parts and components)
- Uses appropriate tools and equipment.
- Applies fault finding methodology (including: uses methodical approach; progressively isolates fault; verifies continued existence of problem; reviews all available information; identifies fault in shortest time possible)
- Documents fault diagnosis and obtains client confirmation of documentation where required.

Resources required for Assessment

- Client file and security system operation information for review
- Work order
- Equipment/systems with faults for diagnosis
- Testing tools, equipment and materials for fault finding
- Manufacturers' operations and fault finding instructions
- Communications equipment
- Case studies
- Criterion referenced assessment instruments
- Relevant codes of practice
- A suitable venue: either in the work place or classroom
- Access to a registered provider of assessment services

UNIT STANDARDS JUSTIFICATION

LEVEL

Attribute	Level	Justification
Skills	5	Definite variety within critical stress, with drastic consequence.
Procedures	5	Familiar procedures apply but not repetitively
Context	3	An endless number of variations can and does occur.
Knowledge	5	Relevant theory is required to address different conditions that may occur.
Information Processing	6	Information is dynamically processed to constantly identify threat
Problem Solving	6	Discretion responsibility and reliability is required to execute the process effectively.
Orientation of activity	5	Follows instructions, works under supervision and must refer any abnormal conditions to the Supervisor, but must be prepared to act on discretion of need.
Application of Responsibility	6	Works under supervision and regular quality control inspection is required, though degree of responsibility is critical, and measurable by preservation of life as primary factor.
Orientation and scope of Responsibility	6	Responsible for own quality and quantity which can have an impact on others in the process

Average Level: 5.2   **Actual Level Assigned:**   5

CREDITS

Total hours required by the learner to achieve the required outcomes:

Activity	Hours
Classroom learning	80
On-the-job learning	100
Self directed learning	30
Coaching required	40
Other	
TOTAL	**250**

CREDITS ACHIEVED: 25

CORE UNIT STANDARDS IN NATIONAL DIPLOMA SECURITY MANAGEMENT: ELECTRONIC SECURITY NQF LEVEL 5.

TITLE: Handover of installed electronic security equipment/systems

LEVEL: 5

CREDITS: 10

FIELD: Law, Military Science and Security

SUBFIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

PURPOSE OF THE UNIT STANDARD:

This unit standard is for persons to successfully handover installed electronic security equipment/systems

Benefit for society of this unit standard is that the person who completes this will contribute to safety in society.

A person credited with this unit standard will be able to :

- Prepare for commissioning
- Explain equipment/system functions and capabilities and hand over equipment/system
- Clear site
- Document commissioning

LEARNING ASSUMED TO BE IN PLACE:

It is assumed that learners wishing to attempt this unit standard have technical literacy, numeracy and communication skills equivalent to NQF level 4.

The following unit standards and / or equivalent competencies

- Planning of electronic security system/equipment installation
- Installation of electronic security systems/equipment wiring
- Installation of electronic security system/equipment
- Programming of electronic security systems/equipment.
- Testing of electronic security systems/equipment.

The following knowledge, skills attitude and / or equivalent:

- Communication, including: liaison; customer service; report writing; consultation; interpersonal; listening; questioning; gaining feedback; giving information.
- Reading and interpreting specifications, charts and diagrams.
- Methodical organisation of work
- Use appropriate test equipment
- Equipment/system maintenance
- Identifying cable
- Cable handling
- 'Fix and make good' practices
- Use hand tools
- Reading/interpreting a multimeters
- Fault finding
- Work in confined spaces
- Safe and efficient work practices
- Training clients in use of equipment/system
- Testing security equipment/system.
- Downloading and uploading information.
- Customisation of equipment/systems.
- Computer literacy.
- Use of keypads and control panels.
- Methodical organisation of work.
- Problem solving.
- Time management.

RANGE STATEMENTS:

- This unit standard applies to persons conducting a handover, to a client, of an installed electronic security systems/equipment without guidance and supervision.

- This unit applies to extra-low voltage environments

SPECIFIC OUTCOMES AND ASSESSMENT CRITERIA:

SPECIFIC OUTCOME 1:

Prepare for commissioning

ASSESSMENT CRITERIA:

1.1	The Learner has explained the work order and demonstrated a clear understanding of it.
1.2	A clear understanding of which tools and resources are required for the commissioning of the system has been demonstrated.
1.3	Risk and hazards have been identified and a preventative measure has been taken.
1.4	Worksite and system has been prepared for commissioning.

SPECIFIC OUTCOME 2:

Explain equipment/system functions and capabilities and hand over equipment/system

ASSESSMENT CRITERIA:

2.1	Equipment/system is tested and operated in presence of client to confirm operation in accordance with company requirements.
2.2	Equipment/system explanation is presented to client or persons authorised to represent client.
2.3	System functions are clearly explained and demonstrated to client.
2.4	Client is trained to correctly operate equipment/system.
2.5	Where required, monitoring and response procedures are determined, clarified and clearly explained to client.
2.6	Where required, customisation of equipment/system to match client requirements is completed.
2.7	Clear instructions are provided on equipment/system maintenance.
2.8	All relevant information and documentation is provided to client in accordance with company requirements.
2.9	Security equipment/system is commissioned in a safe and efficient manner.

SPECIFIC OUTCOME 3:

Clear site

ASSESSMENT CRITERIA

3.1   All tools, materials and unused stock are removed from installation site.

3.2   All waste are disposed off in a safe manner.

3.3   All electrical connections, junction boxes and covers are functional and secured

3.4   Worksite is handed back to client ensuring that the installation site has been reinstated to the clients satisfaction.

SPECIFIC OUTCOME 3:

Document commissioning

ASSESSMENT CRITERIA

3.1   Results of commissioning are documented promptly and accurately, in accordance with company requirements.

3.2   Client signature is obtained to confirm acceptance of installation and commissioning of equipment/system, in accordance with company requirements.

3.3   Client equipment /system records are updated to ensure traceability of information maintained.

3.4   Client equipment/system records are handed over to relevant departments where required, in accordance with company requirements.

RANGE : (The range of variables applies to all outcomes)

Client must include:

- Owner; property agent; tenant; building supervisor; manager; project manager; agent; government and legal instrumentalities/agencies

Company requirements must be found in:

- Operations manuals; induction documentation; training materials; policy and procedures documents; insurance policy agreements; verbal or written instructions; client and company confidentiality requirements; quality assurance documents

Manufacturers' specifications must be found in:

- Printed instruction leaflets; operators manuals; equipment specifications; attached to the equipment; plans and diagrams; warranty documents

Work order will be written, and must include:

- Work schedule; completion dates; job requirements and tasks; specific client requirements; access to site and specific site requirements; resource requirements; OHS requirements and compliance with relevant legislation; company requirements; budget allocations

Commissioning requirements must include:

- Equipment/system to be commissioned; persons to be trained; scheduling of commissioning; information/documentation to be handed over to client; customisation requirements; monitoring and response procedures to be determined/clarified

Tools and equipment must include:

- Computer; software; test equipment; multimeters; hand tools; fixing tools; strippers; router; power saw; hand tools; file; drill; followers; glass break tester; spirit level; soldering iron; welder; crimp tools; IDC tools; ladder; hoist; personal protective equipment; communications equipment

Electronic security equipment must include:

- Detection devices; audible and visual warning devices; cameras; monitors and control equipment; control panels; intercoms; wireless equipment; car alarms; electronic readers; electronic recognition controls; locks and locking systems; grills; lighting; boom gates; turnstiles; bank pop up screen; biometrics; electric and mechanical fire safety and fire locking systems; power supplies, batteries; security doors and door controls

Electronic security system must include:

- Electronic; mechanical; computerised; procedural

Possible risks and hazards must include:

- Non-compliance with building codes and regulations; exposed electrical wiring; asbestos; dust; noise; live power; vermin; water; glass fibre; building debris; natural and other gas build-up

Training must include:

- Verbal, written explanations; demonstration; practice; question and answer session

Monitoring and response procedures to be determined and clarified must include:

- Sector lists; response procedures and actions; contact lists

Customisation of equipment/system must include:

- Changing password or user code; modifying system functions; adding system functions; changing volume or length of alarms

Information/documentation provided to client must include:

- Manufacturers' manual; user manuals; maintenance requirements and contract; monitoring procedures and contract; keying plan; warranty requirements and contract; additional company marketing information; company contact details

Results of commissioning documentation must include:

- Commissioning undertaken; persons equipment/system commissioned to; date and time of commissioning; information/documentation handed over to client; job card; customisation of equipment/system

Departments must include:

- Monitoring station; service; maintenance; accounts

Safe operating procedures must include:

- Working safely around electrical wiring; cables and overhead power lines; working safely around tools and equipment; hazard recognition; emergency procedures; awareness of electrical hazards; follow confined spaces procedures; first aid
- Personal protective equipments required will be worn/fitted in accordance with company requirements; OHS and other legislation

Personal protective equipment must include:

- Safety boots

Legislative considerations for testing commissioning security equipment/system must include:

- OHS requirements and safe work practices

ACCREDITATION AND MODERATION OPTIONS:

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

NOTES:

1.   CRITICAL OUTCOMES

The following critical outcomes are addressed in this unit standard:

- Identify and solve problems when training client to use system/equipment, ensuring all possible uncertainties and difficulties are efficiently dealt with.
- Organise and manage oneself and ones activities by ensuring prompt and timeous handing over of system/equipment.
- Collect, analyse, organise and critically evaluate information when reviewing work order, ensuring all commissioning requirements have been fulfilled prior to handover.
- Communicate effectively with client when explaining operating of the system/equipment, ensuring proper handover and safe usage afterward.
- Use science and technology effectively by demonstrating practically to the client all operations and functions of system/equipment.

2.   **ESSENTIAL EMBEDDED KNOWLEDGE**

- Types, functions and requirements of security equipment/system.
- Keypad and control panel types and functions.
- Methods of equipment/system commissioning.
- Equipment/system configurations and programs
- Security equipment/system test equipment.
- Computer software
- Technical terms
- Company requirements.
- Company and client confidentiality requirements.
- OHS requirements and safe work practices

3.   **SUPPLEMENTARY INFORMATION:**

Assessment Statement

Assessment is the process of collecting evidence and making judgments on the extent and nature of progress towards the achievement of the performance standard outlined in this unit.

Assessment against this unit of competency must involve any of the following techniques:

- Continuous assessment in an institutional setting that stimulates the conditions of performance describe in the elements, performance criteria and range of variables statement that make up the unit.
- Continuous assessments in the workplace, taking into account the range of variables affecting performance.
- Self-assessment on the same terms as those described above
- Simulated assessment or critical incident assessment, provided that the critical incident involves assessment against performance criteria and an evaluation of underpinning knowledge and skill required to achieve the required performance outcomes.

Guidance of assessment

Evidence of competency is best obtained by observing activities in the field and in the office and reviewing fault finding in security equipment/system under normal industry operating conditions. If this is not practicable, observations in realistic simulated environments must be substituted.

Evidence of competency will include:

- Consults client and assesses operational data to identify and clarify problem.
- Ascertains normal performance.
- Makes an assessment of likelihood of fault existing.
- Establishes context and background information (site variables and historical information)

- Determines and ranks likely causes of fault.
- Applies checks and tests (including: visually inspects likely fault; checks connections; parts and components)
- Uses appropriate tools and equipment.
- Applies fault finding methodology (including: uses methodical approach; progressively isolates fault; verifies continued existence of problem; reviews all available information; identifies fault in shortest time possible)
- Documents fault diagnosis and obtains client confirmation of documentation where required.

Resources required for Assessment

- Client file and electronic security system/equipment operation information for review
- Work order
- Equipment/systems with faults for diagnosis
- Testing tools, equipment and materials for fault finding
- Manufacturers' operations and fault finding instructions
- Communications equipment
- Case studies
- Criterion referenced assessment instruments
- Relevant codes of practice
- A suitable venue: either in the work place or classroom
- Access to a registered provider of assessment services

UNIT STANDARDS JUSTIFICATION

LEVEL

Attribute	Level	Justification
Skills	6	Definite variety within critical stress, with drastic consequence.
Procedures	5	Familiar procedures apply but not repetitively
Context	6	An endless number of variations can and does occur.
Knowledge	5	Relevant theory is required to address different conditions that may occur.
Information Processing	5	Information is dynamically processed to constantly identify threat
Problem Solving	5	Discretion responsibility and reliability is required to execute the process effectively.
Orientation of activity	5	Follows instructions, works under supervision and must refer any abnormal conditions to the Supervisor, but must be prepared to act on discretion of need.
Application of Responsibility	5	Works under supervision and regular quality control inspection is required, though degree of responsibility is critical, and measurable by preservation of life as primary factor.
Orientation and scope of Responsibility	5	Responsible for own quality and quantity which can have an impact on others in the process

Average Level: 5.2   **Actual Level Assigned:** 5

CREDITS

Total hours required by the learner to achieve the required outcomes:

Activity	Hours
Classroom learning	30
On-the-job learning	40
Self directed learning	20
Coaching required	10
Other	
TOTAL	**100**

CREDITS ACHIEVED: 10

CORE UNIT STANDARDS IN NATIONAL DIPLOMA SECURITY MANAGEMENT: ELECTRONIC SECURITY NQF LEVEL 5.

TITLE: Test installed electronic security equipment/systems

LEVEL: 5

CREDITS: 20

FIELD: Law, Military Science and Security

SUBFIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

PURPOSE OF THE UNIT STANDARD:

This unit standard is for persons who must be able to successfully test an installed electronic security systems/equipment

Benefit for society of this unit standard is that the person who completes this will contribute to safety in society.

A person credited with this unit standard will be able to

- Prepare for equipment/system test

- Perform tests
- Interpret results and determine action
- Document test results

LEARNING ASSUMED TO BE IN PLACE:

It is assumed that learners wishing to attempt this unit standard have technical literacy, numeracy and communication skills equivalent to NQF level 4.

The following unit standards and / or equivalent competencies

- Planning of electronic security system/equipment installation
- Installation of electronic security systems/equipment wiring
- Installation of electronic security system/equipment
- Programming of electronic security systems/equipment.

The following knowledge, skills attitude and / or equivalent:

- Communication, including: liaison; customer service; report writing; consultation; interpersonal; listening; questioning; gaining feedback; giving information).
- Reading and interpreting plans and specifications.
- Selection and use of relevant testing tools and equipment.
- Evaluation of test results.
- Cable isolation, testing and tagging procedures.
- Power security equipment/system.
- Downloading and uploading information.
- Computer literacy.
- Use of keypads and control panels.
- Methodical organisation of work.
- Cable handling.
- Problem solving.
- Time management.

RANGE STATEMENTS:

This unit standard applies to persons who will test an installed security systems/equipment.

This unit applies to extra-low voltage environments.

SPECIFIC OUTCOMES AND ASSESSMENT CRITERIA:

SPECIFIC OUTCOME 1:

Prepare for equipment/system test

ASSESSMENT CRITERIA

1.1   The learner has explained the work order and the required performance of the system.

1.2   Tools and equipment has been selected and checked for safe and efficient operation.

1.3   The relevance of tools and equipment used is explained.

1.4   The work area and system has been inspected and declared safe for testing.

1.5   Possible risks and hazards to testing are identified and managed according to job requirements, in accordance with company, manufacturer, OHS and other legislative requirements

SPECIFIC OUTCOME 2:

Perform tests

ASSESSMENT CRITERIA

2.1   Tools and equipment selected are suitable for the tests to be performed to ensure relevance of test data.

2.2   Tests provide reliable, relevant and accurate test data on equipment/ system operation and functioning.

2.3   Work is performed safely to remove risk of injury to operator, other users or equipment/system.

2.4   Where required, clear communication is maintained with monitoring station during performance of tests.

2.5   Client requirement on system performance and functionality has been met.

SPECIFIC OUTCOME 3:

Interpret results and determine action

ASSESSMENT CRITERIA

3.1   Test results must be interpreted with due diligence and compared against manufacturers' specifications and equipment/system requirements for performance.

3.2   All test requirements and parameters are considered when evaluating test results.

3.3   Test results are assessed fairly and accurately and are based on verifiable data.

3.4   Causes, faultfinding and methods of rectification of sub standard test results has been explained and rectified.

SPECIFIC OUTCOME 4:

Document test results

ASSESSMENT CRITERIA

4.1   Accurate and timeous documentation of test process and findings has been verified and submitted, in accordance with company requirements.

4.2   Client equipment/system records are secured according to company requirements to ensure that traceability of information is maintained.

4.3   Appropriate interpersonal skills ensure effective customer relationships when discussing test results with the client.

4.4   Correctly documented test results verifies client satisfaction with regards to competent installation.

RANGE : (The following variables covers all the specific outcomes)

Client must include:

- Owner; property agent; tenant; building supervisor; manager; project manager; agent; government and legal instrumentalities/agencies.

Company requirements must be found in:

- Operations manuals; induction documentation; training materials; policy and procedures documents; insurance policy agreement; verbal or written instructions; client and company confidentiality requirements; quality assurance documents.

Manufacturers' specifications must be found in:

- Printed instruction leaflets; operators manuals; equipment specifications; attached to the equipment; plans and diagrams; warranty documents.

Work order will be written, and must include:

- Work schedule; completion dates; job requirements and tasks; specific client requirements; access to site and specific site requirements. OHS requirements and compliance with relevant legislation; company requirements; budget allocations.

Tests must include:

- Testing cable, wiring and connections (continuity, resistance, earth leakage, voltage); walk test; coverage test; safety tests; calibration test; test for correct relaying of information/data; testing to specifications; detection test; alarm test; functional test.

Tools and equipment must include:

- Computer; software; test equipment; ladder; scaffold; scissor lift; hoist; batteries; personal protective equipment; communications equipment

Materials must include:

- Computer disks; test board; test tape.

Possible risks and hazards must include:

- Non-compliance with building codes and regulations; exposed electrical wiring; asbestos dust; live power; vermin; water; glass fibre; building debris; natural and other gas build-up.

Electronic security equipment must include:

- Detection devices; audible and visual warning devices; cameras; monitors and control equipment; control panels; intercoms; wireless equipment; car alarms; electronic readers; electronic recognition controls; locks and locking systems; grills; lighting; boom gates; turnstiles; bank pop up screens; biometrics; electric and mechanical fire safety and fire locking systems; power supplies; batteries; security doors and door controls

Electronic security system must include:

- Electronic; mechanical; computerised; procedural

Safe operating procedures must include:

- Working safely around electrical wiring; cables and overhead power lines; working safely around tools and equipment; hazard recognition; emergency procedures; awareness of electrical hazards; follow confined spaces procedures; first aid
- Personal protective equipment required will be worn/fitted in accordance with company requirements; OHS and other legislation.

Personal protective equipment must include:

- Safety boots, hard hat, protective eyewear, ear protection

Legislative considerations for identifying and diagnosing faults must include:

- OHS requirements and safe work practices

ACCREDITATION AND MODERATION OPTIONS:

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

NOTES:

1. CRITICAL OUTCOMES

The following critical outcomes are addressed in this unit standard:

- Identify possible risks and hazards to testing and solve these problems creatively and in accordance all relevant requirements to ensure safe and efficient testing.
- Work effectively with others ensuring safe operating procedures are applied and no possible injuries can occur to colleagues or members of the public.
- Organise and manage oneself and ones activities when preparing for testing by ensuring all tools and equipment is obtained on time and free of any defects.
- Collect, analyse, organise and critically evaluate information on work order, client requirements, safety regulations and verifiable data, thereby ensuring that accurate documentation of tests and findings can be submitted and traced as required.
- Communicate effectively with operators at monitoring station during testing, and with client before and after testing, to ensure transparency and accurate interpretation of vital information.
- Demonstrate understanding of the effect of comprehensive and reliable testing of security equipment on safety of individuals and client relations, thereby facilitating repeat business.

- Use science and technology effectively and safely when testing security equipment ensuring correct computer software, test equipment, ladder / scaffolding, personal safety equipment and communications equipment are utilised.

2.   ESSENTIAL EMBEDDED KNOWLEDGE

- Powering systems.
- Types, functions and requirements of security equipment/system.
- Keypad and control panel types and functions.
- Methods of equipment/system testing.
- Cable identification.
- Earthing systems arrangements and requirements.
- Electrical concepts - voltage, current, resistance and impedance.
- Electrical connections.
- Types of electrical circuits.
- Circuit protection requirements.
- Cable handling requirements.
- Testing wiring systems.
- Test equipment uses.
- Equipment/system configurations and programs.
- Circuit protection requirements.
- Computer software.
- Isolating and testing procedures.
- Technical terms.
- Company requirements.
- Company and client confidentiality requirements.
- OHS requirements and safe work practices.

3.   SUPPLEMENTARY INFORMATION:

Assessment Statement

Assessment is the process of collecting evidence and making judgments on the extent and nature of progress towards the achievement of the performance standard outlined in this unit.

Assessment against this unit of competency may involve any of the following techniques:

- Continuous assessment in an institutional setting that stimulates the conditions of performance describe in the elements, performance criteria and range of variables statement that make up the unit
- Continuous assessment in the workplace, taking into account the range of variables affecting performance
- Self-assessment on the same terms as those described above
- Simulated assessment or critical incident assessment, provided that the critical incident involves assessment against performance criteria and an evaluation of underpinning knowledge and skill required to achieve the required performance outcomes

Resources required for Assessment

- Client file and security system operation requirements for review.
- Work order.
- Tools, equipment and materials for cable installation.
- Manufacturers' device operating instructions.
- Communications equipment.
- Case studies.
- Criterion referenced assessment instructions.
- Relevant codes of practice.
- A suitable venue: either in the workplace or classroom.
- Access to a registered provider of assessment services.

UNIT STANDARDS JUSTIFICATION

LEVEL

Attribute	Level	Justification
Skills	5	Definite variety within critical stress, with drastic consequence.
Procedures	5	Familiar procedures apply but not repetitively
Context	5	An endless number of variations can and does occur.
Knowledge	5	Relevant theory is required to address different conditions that may occur.
Information Processing	5	Information is dynamically processed to constantly identify threat
Problem Solving	5	Discretion responsibility and reliability is required to execute the process effectively.
Orientation of activity	5	Follows instructions, works under supervision and must refer any abnormal conditions to the Supervisor, but must be prepared to act on discretion of need.
Application of Responsibility	5	Works under supervision and regular quality control inspection is required, though degree of responsibility is critical, and measurable by preservation of life as primary factor.
Orientation and scope of Responsibility	5	Responsible for own quality and quantity which can have an impact on others in the process

Average Level: 5   **Actual Level Assigned:**   5

CREDITS

Total hours required by the learner to achieve the required outcomes:

Activity	Hours
Classroom learning	60
On-the-job learning	90
Self directed learning	10
Coaching required	40
Other	
TOTAL	**200**

CREDITS ACHIEVED: **20**

CORE UNIT STANDARDS IN NATIONAL DIPLOMA SECURITY MANAGEMENT: ELECTRONIC SECURITY NQF LEVEL 5.

TITLE: Programming of Electronic Security systems/equipment

LEVEL: 5

CREDITS: 20

FIELD: Law, Military Science and Security

SUBFIELD: Safety in Society

ISSUE DATE:

REVIEW DATE:

PURPOSE OF THE UNIT STANDARD:

This unit standard is for persons to successfully program electronic security equipment/system.

Benefit for society of this unit standard is that the person who completes this will contribute to safety in society.

A person credited with this unit standard will be able to:

- Prepare for programming
- Correctly default an installed security system and/or equipment
- Perform programming
- Conduct administration

LEARNING ASSUMED TO BE IN PLACE:

It is assumed that learners wishing to attempt this unit standard have technical literacy, numeracy and communication skills equivalent to NQF level 4.

Competency in the following unit standards:

- Planning of electronic security system/equipment installation
- Installation of electronic security systems/equipment wiring
- Installation of electronic security system/equipment

The following knowledge, skills attitude and / or equivalent:

- Communication, including: liaison; customer service; report writing; consultation; interpersonal; listening; questioning; gaining feedback; giving information.
- Reading and interpreting specifications, charts and diagrams.
- Methodical organisation of work
- Use appropriate test equipment
- Equipment/system maintenance
- Identifying cable
- Cable handling
- 'Fix and make good' practices
- Use hand tools
- Reading/interpreting a multimeters
- Fault finding
- Work in confined spaces
- Safe and efficient work practices

RANGE STATEMENTS:

- This unit standard applies to persons conducting programming work on electronic security systems/equipment without guidance and supervision.
- This unit applies to extra-low voltage environments
- Programming may be made remotely or on site.

SPECIFIC OUTCOMES AND ASSESSMENT CRITERIA:

SPECIFIC OUTCOME 1:

Prepare for programming

ASSESSMENT CRITERIA:

1.1   The Learner has explained the layout of the programming worksheet and identified how the system will react after programming.

1.2   Demonstrate a clear understanding of the manufacturer specifications on programming.

1.3   Tools and equipment required to program are obtained and checked to ensure safe and efficient operation.

1.4   Complete the programming worksheet.

1.5   The correct programming medium has been selected to effectively program the system and devices.

1.6   A clear understanding of the installation layout is demonstrated.

SPECIFIC OUTCOME 2:

Correctly default an installed security system and devices

ASSESSMENT CRITERIA:

2.1   Demonstrate a clear understanding of the process of defaulting a system or device.

2.2   Equipment/system performance, functions and limitations are understood.

2.3   Demonstrate competency in the different methods of defaulting a system.

2.4   Successfully default a system or device considering the stability of the system/device.

2.5   Default the system, considering the safety of self and others.

SPECIFIC OUTCOME 3:

Perform programming

ASSESSMENT CRITERIA

3.1   Demonstrate a clear understanding of the different programming languages.

3.2   Perform programming as per the programming work sheet and verify the accuracy of the programming by reviewing the programming.

3.3   Demonstrate a clear understanding of how the system and devices must react prior to and after programming.

3.4   Successfully program a system/device in such a manner that the system/device reacts and perform as per manufacturer specifications.

3.5   Ensure that the system/device performs/reacts according to the client's expectations after programming has been completed.

SPECIFIC OUTCOME 4:

Conduct Administration

ASSESSMENT CRITERIA

3.1   Ensure that the programming work sheet is comprehensively completed and that all relevant programming details are available for future reference.

3.2   Where required, ensure that reference numbers of successful communications with a remote monitoring station has been obtained and entered onto the programming worksheet and job cards.

3.3   Client confirmation of programming is obtained where required.

3.4   Indemnity is included to protect interest of all parties where required.

RANGE : (The range of variables applies to all outcomes)

Client must include:

- Owner; property agent; tenant; building supervisor; manager; project manager; agent; government and legal instrumentalities/agencies

Company requirements must be found in:

- Operations manuals; induction documentation; training materials; policy and procedures documents; insurance policy agreements; verbal or written instructions; client and company confidentiality requirements; quality assurance documents

Manufacturers' specifications must be found in:

- Printed instruction leaflets; operators manuals; equipment specifications; attached to the equipment; plans and diagrams; warranty documents

Work order will be written, and must include:

- Work schedule; completion dates; job requirements and tasks; specific client requirements; access to site and specific site requirements; resource requirements; OHS requirements and compliance with relevant legislation; company requirements; budget allocations

Tools and equipment must include:

- Computer; software; test equipment; multimeters; hand tools; fixing tools; strippers; router; power saw; hand tools; file; drill; followers; glass break tester; spirit level; soldering iron; welder; crimp tools; IDC tools; ladder; hoist; personal protective equipment; communications equipment

Electronic security equipment must include:

- Detection devices; audible and visual warning devices; cameras; monitors and control equipment; control panels; intercoms; wireless equipment; car alarms; electronic readers; electronic recognition controls; locks and locking systems; grills; lighting; boom gates; turnstiles; bank pop up screen; biometrics; electric and mechanical fire safety and fire locking systems; power supplies, batteries; security doors and door controls

Electronic security system must include:

- Electronic; mechanical; computerised; procedural

Possible risks and hazards must include:

- Non-compliance with building codes and regulations; exposed electrical wiring; asbestos; dust; noise; live power; vermin; water; glass fibre; building debris; natural and other gas build-up

Training must include:

- Verbal, written explanations; demonstration; practice; question and answer session

Monitoring and response procedures to be determined and clarified must include:

- Sector lists; response procedures and actions; contact lists

Customisation of equipment/system must include:

- Changing password or user code; modifying system functions; adding system functions; changing volume or length of alarms

Information/documentation provided to client must include:

- Manufacturers' manual; user manuals; maintenance requirements and contract; monitoring procedures and contract; keying plan; warranty requirements and contract; additional company marketing information; company contact details

Results of commissioning documentation must include:

- Commissioning undertaken; persons equipment/system commissioned to; date and time of commissioning; information/documentation handed over to client; job card; customisation of equipment/system

Departments must include:

- Monitoring station; service; maintenance; accounts

Safe operating procedures must include:

- Working safely around electrical wiring; cables and overhead power lines; working safely around tools and equipment; hazard recognition; emergency procedures; awareness of electrical hazards; follow confined spaces procedures; first aid
- Personal protective equipments required will be worn/fitted in accordance with company requirements; OHS and other legislation

Personal protective equipment must include:

- Safety boots

Legislative considerations for testing commissioning security equipment/system must include:

- OHS requirements and safe work practices

ACCREDITATION AND MODERATION OPTIONS:

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

NOTES:

1.   CRITICAL OUTCOMES

The following critical outcomes are addressed in this unit standard:

*   Identify and solve problems when training client to use system, ensuring all possible uncertainties and difficulties are efficiently dealt with.
*   Organise and manage oneself and ones activities by ensuring prompt and timeous handing over of system.
*   Collect, analyse, organise and critically evaluate information when reviewing work order, ensuring all commissioning requirements have been fulfilled prior to handover.
*   Communicate effectively with client when explaining operating of the system, ensuring proper handover and safe usage afterward.
*   Use science and technology effectively by demonstrating practically to the client all operations and functions of system.

2.   ESSENTIAL EMBEDDED KNOWLEDGE

*   Types, functions and requirements of security equipment/system.
*   Keypad and control panel types and functions.
*   Methods of equipment/system commissioning.
*   Equipment/system configurations and programs
*   Security equipment/system test equipment.
*   Computer software
*   Technical terms
*   Company requirements.
*   Company and client confidentiality requirements.
*   OHS requirements and safe work practices

3.   SUPPLEMENTARY INFORMATION:

Assessment Statement

Assessment is the process of collecting evidence and making judgments on the extent and nature of progress towards the achievement of the performance standard outlined in this unit.

Assessment against this unit of competency may involve any of the following techniques:

- Continuous assessment in an institutional setting that stimulates the conditions of performance describe in the elements, performance criteria and range of variables statement that make up the unit.
- Continuous assessments in the workplace, taking into account the range of variables affecting performance.
- Self-assessment on the same terms as those described above
- Simulated assessment or critical incident assessment, provided that the critical incident involves assessment against performance criteria and an evaluation of underpinning knowledge and skill required to achieve the required performance outcomes.

Guidance of assessment

Evidence of competency is best obtained by observing activities in the field and in the office and reviewing fault finding in security equipment/system under normal industry operating conditions. If this is not practicable, observations in realistic simulated environments may be substituted.

Evidence of competency will include:

- Consults client and assesses operational data to identify and clarify problem.
- Ascertains normal performance.
- Makes an assessment of likelihood of fault existing.
- Establishes context and background information (site variables and historical information)
- Determines and ranks likely causes of fault.
- Applies checks and tests (including: visually inspects likely fault; checks connections; parts and components)
- Uses appropriate tools and equipment.
- Applies fault finding methodology (including: uses methodical approach; progressively isolates fault; verifies continued existence of problem; reviews all available information; identifies fault in shortest time possible)
- Documents fault diagnosis and obtains client confirmation of documentation where required.

Resources required for Assessment

- Client file and security system operation information for review
- Work order
- Equipment/systems with faults for diagnosis
- Testing tools, equipment and materials for fault finding
- Manufacturers' operations and fault finding instructions
- Communications equipment

- Case studies
- Criterion referenced assessment instruments
- Relevant codes of practice
- A suitable venue: either in the work place or classroom
- Access to a registered provider of assessment services

UNIT STANDARDS JUSTIFICATION

LEVEL

Attribute	Level	Justification
Skills	5	Definite variety within critical stress, with drastic consequence.
Procedures	5	Familiar procedures apply but not repetitively
Context	5	An endless number of variations can and does occur.
Knowledge	6	Relevant theory is required to address different conditions that may occur.
Information Processing	5	Information is dynamically processed to constantly identify threat
Problem Solving	6	Discretion responsibility and reliability is required to execute the process effectively.
Orientation of activity	5	Follows instructions, works under supervision and must refer any abnormal conditions to the Supervisor, but must be prepared to act on discretion of need.
Application of Responsibility	5	Works under supervision and regular quality control inspection is required, though degree of responsibility is critical, and measurable by preservation of life as primary factor.
Orientation and scope of Responsibility	6	Responsible for own quality and quantity which can have an impact on others in the process

Average Level: 5.3   Actual Level Assigned: 5

CREDITS

Total hours required by the learner to achieve the required outcomes:

Activity	Hours
Classroom learning	60
On-the-job learning	80
Self directed learning	20
Coaching required	40
Other	
TOTAL	**200**

CREDITS ACHIEVED: **20**

UNIT STANDARDS DEVELOPED BY THE SGB FOR SECURITY

FIELD: LAW, MILITARY SCIENCE AND SECURITY

SUBFIELD: SAFETY IN SOCIETY

NQF LEVEL: 5

UNIT STANDARDS AT NQF LEVEL 4

SECURITY MANAGEMENT: ELECTRONIC SECURITY

Title 1   Planning of electronic security equipment/system installation

Title 2   Installation of electronic security equipment/systems

Title 3   Installation of electronic security equipment/systems wiring

UNIT STANDARDS AT NQF LEVEL 5

SECURITY MANAGEMENT: ELECTRONIC SECURITY

Title 1:   Programming of electronic security systems/equipment

Title 2:   Test installed electronic security equipment/systems

Title 3:   Fault finding in electronic security systems/equipment

Title 4:   Maintain security electronic equipment/systems

Title 5:   Handover of installed electronic security equipment/systes

Security Management: Electronic Security NQF Level 4

Specific outcomes of unit standards

1	**Title:**	**Planning of electronic security equipment/systems installations**
Specific outcomes 1.1		Obtain/create a floor plan of the premises/property that needs to be protected by electronic security equipment/systems
Specific outcome 1.2		Determine systems/devices required as well as correct placement
Specific outcome 1.3:		Control stock
Specific outcome 1:4		Confirm power supply
2	**Title:**	**Installation of electronic equipment/systems wiring**
Specific outcome 2.1:		Identify cable and determine suitability for application
Specific outcome 2.2:		Operate basic hand tools
Specific outcome 2.3:		Operate basic power tools
Specific outcome 2.4:		Correct use of handheld drilling apparatus
Specific outcome 5:		Correct use of soldering apparatus
Specific outcome 6:		Secure cabling from point of origin to termination point
Specific outcome 7:		Mounting of devices

3 Title:	**Installation of electronic equipment/systems wiring**
Specific outcome 3.1:	Prepare installation
Specific outcome 3.2:	Perform installation
Specific outcome 3.3:	Clean up worksite
Specific outcome 3.4:	Document installation where required

UNIT STANDARDS AT NQF LEVEL 5
SECURITY MANAGEMENT: ELECTRONIC SECURITY

4 Title:	**Programming of electronic security systems/equipment**
Specific outcome 4.1:	Prepare programming
Specific outcome 4.2:	Correctly default an installed security system and devices
Specific outcome 4.3:	Perform programming
Specific outcome 4.4:	Conduct administration
5 Title:	**Test installed electronic security equipment/systems**
Specific outcome 5.1:	Prepare for equipment/system test
Specific outcome 5.2:	Perform tests
Specific outcome 5.3:	Interpret results and determine action
Specific outcome 5.4:	Document test results

6	Title:	**Fault finding in electronic security systems/equipment**
Specific outcome 6.1:		Identify and clarify nature of problem
Specific outcome 6.2:		Determine and rank likely causes of fault
Specific outcome 6.3:		Apply checks and tests
Specific outcome 6.4:		Use appropriate tools and equipment where required
Specific outcome 6.5:		Apply fault finding methodology
Specific outcome 6.6:		Document diagnosis of fault where required

7	Title:	**Maintain security equipment/systems**
Specific outcome 7.1:		Prepare for maintenance
Specific outcome 7.2:		Conduct maintenance
Specific outcome 7.3:		Clean up worksite
Specific outcome 7.4:		Document maintenance where required.

8	Title:	**Handover of installed electronic security equipment/systems**
Specific outcome 8.1:		Prepare for commissioning
Specific outcome 8.2:		Explain equipment/system functions and capabilities and hand over equipment/system
Specific outcome 8.3:		Clear site
Specific outcome 8.4:		Document commissioning

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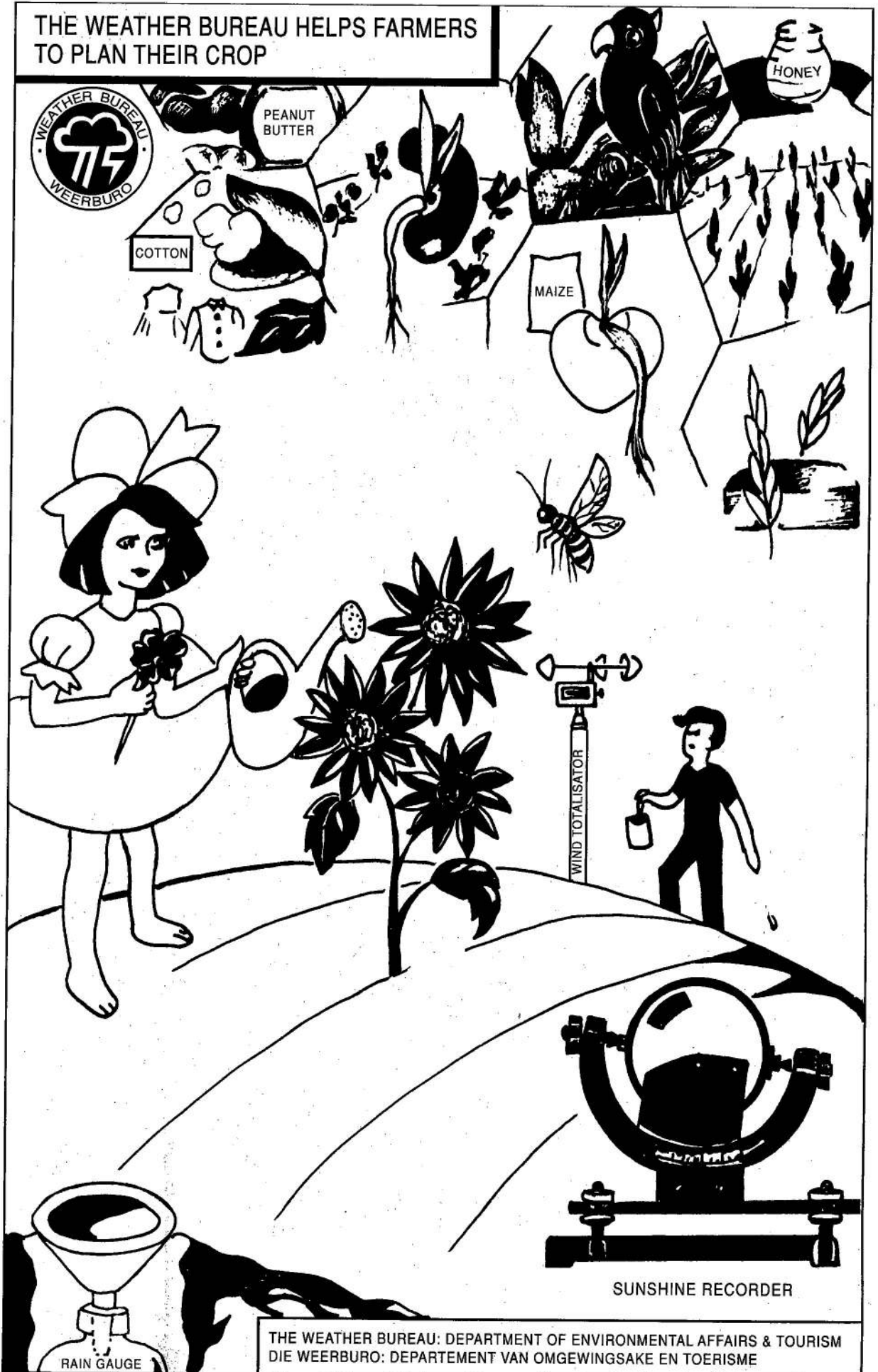
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