




Quality Council for Trades & Occupations

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SKILLS PROGRAMME CURRICULUM DOCUMENT

SKILLS PROGRAMME	TYPE (NOMENCLATURE)	TITLE (DESCRIPTOR)	NQF LEVEL	CREDITS
Skills Programme	Skills Programme	Electrical Line Mechanic's Assistant (Low and Medium Voltage)	2	49
CURRICULUM CODE	900523-000-00-00			
PARTNER DETAILS	ORGANISATION NAME	WEBSITE ADDRESS	TELEPHONE NUMBER	LOGO
QUALITY PARTNER - DEVELOPMENT	The Energy & Water Sector Education Training Authority (EWSETA)	www.ewseta.org.za	011 274 4700	

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SECTION 1: CURRICULUM SUMMARY

1.1 Occupational Information:

1.1.1 Associated, Organising Framework for Occupations (OFO) Occupational Code and Title

862918: Electrical or Telecommunications Trades Assistant

1.1.2 Skills Programme Type, Title, NQF Level, Credits and Curriculum Code, addressed by this Curriculum.

TYPE	TITLE	NQF LEVEL	CREDITS	CURRICULUM CODE
Skills Programme	Electrical Line Mechanic's Assistant (Low and Medium Voltage)	2	49	900523-000-00-00

1.1.3 Alternative titles used by industry:

Electrical Line Mechanic Aide

Electrical Line Mechanic Helper

1.2 Curriculum Information:

1.2.1 Articulation for Skills programmes

(a) Work Opportunities:

Learners successfully completing this skills programme may be employable in the electrical field for roles related to the installation, maintenance and repair of electrical infrastructure.

(b) Learning Opportunities:

Learners may further their studies by enrolling in electrical installation related qualifications and skills programmes subject to adhering to minimum entry requirements.

1.3 Curriculum Structure:

1.3.1 Knowledge/Theory Modules:

900523-000-00-KM-01, Workplace health and safety, NQF Level 2, Credits 8

900523-000-00-KM-02, Tools, equipment and electrical work, NQF Level 2, Credits 5

900523-000-00-KM-03, Medium voltage (MV) construction, NQF Level 2, Credits 10

900523-000-00-KM-04 Low and medium voltage (LV and MV) structure and line inspection, NQF Level 2, Credits 1

Total number of credits: 24

1.3.2 Practical Skills Modules:

900523-000-00-PM-01, Prepare for and construct low and medium voltage (LV and MV) structures, NQF Level 2, Credits 5

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900523-000-00-PM-02, Handle and install overhead conductors, NQF Level 2, Credits 8

900523-000-00-PM-03, Install low and medium voltage (LV and MV) infrastructure components, NQF Level 2, Credits 10

900523-000-00-PM-04, Inspect and maintain lines and structures, NQF Level 2, Credits 2

Total number of credits: 25

1.4 Entry Requirements:

NQF Level 1 qualification

1.5 Recognition of Prior Learning (RPL):

1.5.1 RPL for Access:

Learners may use the RPL process to gain access to training opportunities for a skills programme if they do not meet the formal, minimum entry requirements for admission. RPL assessment provides an alternative access route into a skills programme.

Such an RPL assessment may be developed, moderated and conducted by the accredited Skills Development Provider which offers that specific skills programme. Such an assessment must ensure that the learner is able to display the equivalent level of competencies required for access, based on the NQF level descriptors

1.5.2 RPL for Exemption:

For exemption from modules through RPL, learners who have gained the stipulated competencies of the modules of a skills programme through any means of formal, informal or non-formal learning and/or work experience, may be awarded credits towards relevant modules, and gaps identified for training, which is then concluded.

1.5.3 RPL for awarding credits:

Learners who have gained the stipulated competencies of the modules of a, skills programme through any means of formal, informal or non-formal learning and/or work experience, may be awarded credits towards relevant modules, and gaps identified for training, which is then concluded.

For a Skills Programme, the accredited Skills Development Provider (SDP) must ensure all modular competency requirements are met prior to the FISA and keep record of such evidence.

Upon successful completion of the FISA, RPL learners will be issued with the QCTO certificate for the skills programme. Quality Partners are responsible for ensuring the RPL mechanism and process for skills programme is approved by the QCTO.

1.6 Quality Partner for Assessment:

Not Applicable

1.7 List of Qualification(s)/Part- Qualification(s)/Skills Programme(s) Related to this Curriculum

None.

SECTION 2: OCCUPATIONAL/SPECIALISATION/PART-QUALIFICATION/SKILLS PROGRAMME PROFILE

2.1 Purpose:

The purpose of the skills programme is to prepare a learner to operate as an Electrical Line Mechanic's Assistant.

An Electrical Line Mechanic's Assistant assists a qualified Electrical Line Mechanic to install, maintain and repair electrical infrastructure that operates above 1kV up to and including 33 kV.

2.2 Tasks

TASK	LINKS TO ELO
Construct low/medium voltage (LV/MV) structures, overhead lines and conductors	Use a variety of tools and instruments to construct low/medium voltage structures, overhead lines and conductors, complying to safety standards and procedures.
Install, inspect and maintain low/medium voltage (LV/MV) lines and infrastructure components	Maintain low/medium voltage lines and infrastructure by applying knowledge of safety and operational requirements

2.3 Occupational Task Details

2.3.1 Task 1

Construct low/medium voltage (LV/MV) structures, overhead lines and conductors

(a) Unique Product or Service:

Constructed low and medium voltage (LV/MV) structures and overhead conductors

(b) Responsibilities:

- Prepare for and construct low and medium voltage (LV and MV) structures
- Handle and install overhead conductors

2.3.2 Task 2

Install, inspect and maintain low/medium voltage (LV/MV) lines and infrastructure components

(a) Unique Product or Service:

Installed and maintained low/medium voltage (LV/MV) lines and infrastructure components

(b) Responsibilities:

- Install low and medium voltage (LV and MV) infrastructure components
- Inspect and maintain lines and structures

2.4 Skills Programme outline

The table below shows the relation between tasks, modules, exit level outcomes and associated assessment criteria.

<p>KM01, Workplace health and safety, NQF Level 2, Credits 8</p> <ul style="list-style-type: none"> • Workplace health and safety • First aid and fire safety 	
	<p>Task 1: Construct low/medium voltage (LV/MV) structures, overhead lines, and conductors ELO 1: Use a variety of tools and instruments to construct low/medium voltage structures, overhead lines and conductors, complying to safety standards and procedures.</p>
<p>KM02, Tools, equipment and electrical work, NQF Level 2, Credits 5</p> <ul style="list-style-type: none"> • Basic fundamentals of electricity • Tools, equipment and housekeeping <p>KM03, Low and medium voltage (LV and MV) construction, NQF Level 2, Credits 10</p> <ul style="list-style-type: none"> • Low and medium voltage (LV and MV) construction <p>KM04, Low and medium Voltage (LV and MV) structure and line inspection, NQF Level 2, Credits 1</p> <ul style="list-style-type: none"> ○ Wood pole inspection ○ Line inspections 	<p>PM01, Prepare for and construct low and medium voltage (LV and MV) structures, NQF Level 2, Credits 5</p> <ul style="list-style-type: none"> • Construct LV/MV infrastructure • Excavate holes and plant poles and stays <p>PM02, Handle and install overhead conductors, NQF Level 2, Credits 8</p> <ul style="list-style-type: none"> • Handle conductors • Install overhead conductors <p>Task 2: Install, inspect and maintain low/medium voltage (LV/MV) lines and infrastructure components ELO 2: Maintain low/medium voltage lines and infrastructure by applying knowledge of safety and operational requirements.</p> <p>PM03, Install medium and low voltage (LV and MV) infrastructure components, NQF Level 2, Credits 10</p> <ul style="list-style-type: none"> • Install pole mounted equipment • Install LV pre-paid split metering <p>PM04, Inspect and maintain lines and structures, NQF Level 2, Credits 2</p> <ul style="list-style-type: none"> • Conduct pole inspection • Conduct line inspection

Associated assessment criteria ELO 1

- Cross arms are assembled according to the given drawings.
- The required insulators are identified, selected and installed according to drawing specifications.
- Poles and stays are inspected to verify correctness of the installation in in terms of the specifications.
- Pole numbers are correctly recorded according to drawing specifications.
- A conductor is tensioned to fit the required distance without any damage whilst observing safety protocols during ascending and descending the pole.

Associated assessment criteria ELO 2

- Associated protecting equipment is safely and correctly installed on Low Voltage LV side of a pole mounted transformers.
- Associated protecting equipment is safely and correctly installed on Medium Voltage MV side of a pole mounted transformers.
- Equipment for earth electrode resistance testing is correctly set up in accordance with the drawing specifications..

SECTION 3: CURRICULUM COMPONENT SPECIFICATIONS

3. Knowledge Module Specifications:

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-KM-01	Workplace health and safety	2	8	Blended
900523-000-00-KM-02	Tools, equipment and electrical work	2	5	Blended
900523-000-00-KM-03	Medium Voltage (MV) construction	2	10	Blended
900523-000-00-KM-04	Medium (MV) structure and line inspection	2	1	Blended

Detailing Knowledge Module (KM) contents

3.1 900523-000-00-KM-01, Workplace health and safety, NQF Level 2, Credits 8

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-KM-01	Workplace health and safety	2	8	Blended

3.1.1 Module Details:

(a) Purpose of Knowledge Module:

The focus of the learning in this knowledge module is to build a basic understanding of the general principles related to workplace health and safety, first aid and fire safety, and ladder safety

The learning will enable learners to demonstrate an understanding of the topics listed below:

(b) List of Knowledge Topics:

TOPIC CODE	TOPIC TITLE	% OF TIME TO BE SPENT
KM-01-KT01	Workplace health and safety	60
KM-01-KT02	Basic first aid and fire safety	40

(c) Detailing each topic listed above into topic elements:

KM-01-KT01: Workplace health and safety 60%		
TOPIC ELEMENT CODE	TOPIC ELEMENT TITLE	% OF TIME TO BE SPENT
KT0101	Health, safety and quality at the workplace	30
KT0102	Safety at road works in urban areas	20
KT0103	Operating Regulations for Low and High Voltage Systems and equipotential earthing awareness	50

(d) Internal Assessment Criteria (IAC) and Weight

IAC CODE	IAC DESCRIPTION	% OF TIME TO BE SPENT
IAC0101	Explain the importance of health, safety and quality at the workplace in relation to the OSH Act (85/93)	15
IAC0102	Identify the basic requirements in terms of Section 8, 9, 13, 14 and 15	15
IAC0103	Explain the correct methods of barricading	10
IAC0104	Explain the risks of not adhering to proper barricading	10
IAC0105	Explain the safety risks associated with lifting of heavy equipment	10
IAC0106	Explain the role of the Electrical Line Mechanic's Assistant in terms of rigging operations	10
IAC0107	Explain the importance and role of pre-task risk assessment	10
IAC0108	Explain the importance of recording risks identified and how to mitigate them	10
IAC0109	Explain the risks and responsibilities of transportation of material, equipment, and people	10

(c) Detailing each topic listed above into topic elements:

KM-01-KT02: Basic first aid and fire safety principles 40%		
TOPIC ELEMENT CODE	TOPIC ELEMENT TITLE	% OF TIME TO BE SPENT
KT0201	Life support and first aid procedures	50
KT0202	Fundamentals of fire safety	50

(d) Internal Assessment Criteria (IAC) and Weight

IAC CODE	IAC DESCRIPTION	% OF TIME TO BE SPENT
IAC0201	Explain the importance of maintaining personal safety in terms of preventing injuries to self and infectious diseases	5
IAC0202	Identify the methods of safeguarding the emergency scene in accordance with relevant practices and legislation.	5
IAC0203	Explain the importance of not moving an injured person	5
IAC0204	Describe the possible visible vital signs of an injured person and what could be done to reassure and calm the injured person	5

IAC0205	Explain the most important issues to consider, the most appropriate method, and correct procedure to control serious bleeding	10
IAC0206	List and explain the steps to be followed when dealing with electrocution (i.e. 1. Switch off the power supply, 2. Determine casualty's level of consciousness, 3. Check vital signs, 4. Cardiopulmonary resuscitation (CPR) and 5. Turn the casualty into the recovery position)	15
IAC0207	Explain what to do and what not to do in case of burns	5
IAC0208	Define fire and explain the fire triangle (triangle of combustion)	13
IAC0209	Explain how fires can be prevented or controlled	13
IAC0210	List and discuss the various classes of fire	7
IAC0211	Identify the signage for the different classes of fire	7
IAC0212	Explain the actions to be followed when catching on fire (i.e. stop, drop and roll)	10

3.1.2 Criteria for accreditation

Physical Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
EQUIPMENT & TOOLS	<ul style="list-style-type: none"> Physical training facilities (or if using a hybrid or e-learning model – software or internet platform) conducive to hosting the number of learners comfortably and safely for the duration of this module. Facilities that meet the minimum requirements for the comfort of learners (ablutions, hand washing facilities, sheltered from the elements etc.). All learning materials, lesson plans, workbooks, assessment guides to cover the related topics. Internal summative assessment instruments
CONSUMABLES	<ul style="list-style-type: none"> None

Human Resource Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
QUALIFICATIONS & EXPERIENCE	Qualification of lecturer/facilitator (SME): <ul style="list-style-type: none"> NQF 4 qualification related to health and safety. Must be a registered assessor
FACILITATOR/LEARNER RATIO	1: maximum 20

Legal Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none">• CIPC registered entity.• SARS Tax compliant• Compliant and current health and safety audit report.• Relevant labour legislation visible in facility or on platform (as required by current legislation).• POPIA compliant

Additional Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none">• None.

3.1.3 Exemptions

None

3.2 900523-000-00-KM-02, Tools, equipment and electrical work, NQF Level 2, Credits 5

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-KM-02	Tools, equipment and electrical work	2	5	Blended

3.2.1 Module Details:

(a) Purpose of Knowledge Module:

The focus of the learning in this knowledge module is to build a basic understanding of the concepts of electricity and the tools and equipment required for performing electrical work.

The learning will enable learners to demonstrate an understanding of the topics listed below.

(b) List of Knowledge Topics:

TOPIC CODE	TOPIC TITLE	% OF TIME TO BE SPENT
KM-02-KT01	Tools, equipment and housekeeping	40
KM-02-KT02	Basic fundamentals of electricity	60

(c) Detailing each topic listed above into topic elements:

KM-02-KT01: Tools and equipment 40%		
TOPIC ELEMENT CODE	TOPIC ELEMENT TITLE	% OF TIME TO BE SPENT
KT0101	Selection, use and care of electrical measuring instruments	25
KT0102	Identification, inspection, and use and care of engineering hand tools	25
KT0103	Basic measurement and marking out	25
KT0104	Selection, use and care of power tools	25

(d) Internal Assessment Criteria (IAC) and Weight

IAC CODE	IAC DESCRIPTION	% OF TIME TO BE SPENT
IAC0101	Identify and explain the correct use of electrical measuring instruments	25
IAC0102	Identify and explain the correct use and care of engineering hand tools	25
IAC0103	Explain the basic measurement and marking out procedures	25

IAC0104	Identify and explain the selection, use and care of power tools	25
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(c) Detailing each topic listed above into topic elements:

KM-02-KT02: Basic fundamentals of electricity 60%		
TOPIC ELEMENT CODE	TOPIC ELEMENT TITLE	% OF TIME TO BE SPENT
KT0201	Types of electricity	20
KT0202	Basic concepts of electricity	20
KT0203	Electrical circuits	20
KT0204	Electrical safety (Introduction to SANS 10142-1, OSH Act 85/93 and related EIR and EMR)	40

(d) Internal Assessment Criteria (IAC) and Weight

IAC CODE	IAC DESCRIPTION	% OF TIME TO BE SPENT
IAC0201	Explain the difference between DC and AC electricity and the different phases single and 3 phase	10
IAC0202	Explain the difference between single phase and 3 phase electricity	10
IAC0203	Explain what is meant by voltage, current resistance and power	20
IAC0204	Explain the concept of an electrical circuit	10
IAC0205	Explain the difference between a parallel, series and combination circuits	10
IAC0206	Explain electrical safety requirements in terms of the OSH Act 85/93 and related regulations (EIR and EMR)	15
IAC0207	Explain your legal responsibilities and restrictions in terms of the legislation and regulations	10
IAC0208	Explain the purpose of SANS 10142-1 and the implications on your work	15

3.2.2 Criteria for accreditation

Physical Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
EQUIPMENT & TOOLS	<ul style="list-style-type: none"> Physical training facilities (or if using a hybrid or e-learning model – software or internet platform) conducive to hosting the number of learners comfortably and safely for the duration of this module. Facilities that meet the minimum requirements for the comfort of learners (ablutions, hand washing facilities, sheltered from the elements etc.) if relevant. All learning materials, lesson plans, workbooks, assessment guides to cover the related topics. All learning materials, lesson plans, workbooks, assessment guides to cover the related topics. Internal summative assessment instruments
CONSUMABLES	<ul style="list-style-type: none"> None

Human Resource Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
QUALIFICATIONS & EXPERIENCE	Qualification of lecturer/facilitator (SME): <ul style="list-style-type: none"> Must be qualified as an Electrical Line Mechanic
FACILITATOR/LEARNER RATIO	1: maximum 20

Legal Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none"> CIPC registered entity. SARS Tax compliant. Compliant and current health and safety audit report. Relevant labour legislation visible in facility or on platform (as required by current legislation). POPIA compliant.

Additional Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)
None.

3.2.3 Exemptions

None

3.3 900523-000-00-KM-03, medium voltage (LV and MV) construction, NQF Level 2, Credits 10

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-KM-03	Low and medium voltage (LV and MV) construction	2	10	Blended

3.3.1 Module Details:

(a) Purpose of Knowledge Module:

The focus of the learning in this knowledge module is to build an understanding of the requirements related to medium voltage (MV) construction.

The learning will enable learners to demonstrate an understanding of the topics listed below:

(b) List of Knowledge Topics:

TOPIC CODE	TOPIC TITLE	% OF TIME TO BE SPENT
KM-03-KT01	Medium Voltage (MV) construction	100

(c) Detailing each topic listed above into topic elements:

KM-03-KT01 Medium Voltage (MV) construction 100%		
TOPIC ELEMENT CODE	TOPIC ELEMENT TITLE	% OF TIME TO BE SPENT
KT0101	Servitudes and way leaves for MV/LV lines	10
KT0102	MV ID and assembly	10
KT0103	Excavation of pole and stay holes for MV lines	10
KT0104	Planting of poles and stays for MV lines	10
KT0105	Crimping of connectors for MV lines	10
KT0106	LV cables	10
KT0107	MV stringing, tensioning and jumpers	10
KT0108	Transformer theory and components	10
KT0109	MV installation of pole mounted transformers	10
KT0110	MV earth electrode resistance testing setting up equipment	10

(d) Internal Assessment Criteria (IAC) and Weight

IAC CODE	IAC DESCRIPTION	% OF TIME TO BE SPENT
IAC0101	Explain the requirements for servitudes and way leaves for MV/LV lines	10
IAC0102	Explain the requirements for MV ID and assembly	10
IAC0103	Explain the requirements for excavation of pole and stay holes for MV lines	10
IAC0104	Explain the requirements for planting of poles and stays for MV lines	10
IAC0105	Explain the requirements for crimping of connectors for MV lines	10
IAC0106	Explain the requirements for LV cables	10
IAC0107	Explain the requirements for MV stringing, tensioning and jumpers	10
IAC0108	Explain the requirements for transformer theory and components	10
IAC0109	Explain the requirements for MV installation of pole mounted transformers	10
IAC0110	Explain the requirements for MV earth electrode resistance testing setting up equipment	10

3.3.2 Criteria for accreditation

Physical Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
EQUIPMENT & TOOLS	<ul style="list-style-type: none"> Physical training facilities (or if using a hybrid or e-learning model – software or internet platform) conducive to hosting the number of learners comfortably and safely for the duration of this module. Facilities that meet the minimum requirements for the comfort of learners (ablutions, hand washing facilities, sheltered from the elements etc.). All learning materials, lesson plans, workbooks, assessment guides to cover the related topics. All learning materials, lesson plans, workbooks, assessment guides to cover the related topics. Internal summative assessment instruments
CONSUMABLES	None

Human Resource Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
QUALIFICATIONS & EXPERIENCE	Qualification of lecturer/facilitator (SME): <ul style="list-style-type: none"> Qualified as an Electrical Line Mechanic
FACILITATOR/LEARNER RATIO	1: maximum 20

Legal Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none">• CIPC registered entity.• SARS Tax compliant.• Compliant and current health and safety audit report.• Relevant labour legislation visible in facility or on platform (as required by current legislation).• POPIA compliant

Additional Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)
None.

3.3.3 Exemptions

None

3.4 900523-000-00-KM-04 Low and medium voltage (LV and MV) structure and line inspection, NQF Level 2, Credits 1

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-KM-04	Low and medium voltage (LV and MV) structure and line inspection	2	1	Blended

3.4.1 Module Details:

(a) Purpose of Knowledge Module:

The focus of the learning in this knowledge module is to build an understanding of the maintenance inspection of wooden poles and lines.

The learning will enable learners to demonstrate an understanding of the topics listed below:

(b) List of Knowledge Topics:

TOPIC CODE	TOPIC TITLE	% OF TIME TO BE SPENT
KM-04-KT01	Wood pole inspection	50
KM-04-KT02	Line inspections	50

(c) Detailing each topic listed above into topic elements:

KM-04-KT01: Wood pole inspection 50%		
TOPIC ELEMENT CODE	TOPIC ELEMENT TITLE	% OF TIME TO BE SPENT
KT0101	Inspecting poles for defects	30
KT0102	Inspecting poles for plumbness	30
KT0103	Inspecting pole numbering for correctness	40

(d) Internal Assessment Criteria (IAC) and Weight

IAC CODE	IAC DESCRIPTION	% OF TIME TO BE SPENT
IAC0101	Explain the process and requirements for inspecting poles for defects	30
IAC0102	Explain the process and requirements for inspecting poles for plumbness	30
IAC0103	Explain the process and requirements for inspecting pole numbering for correctness	40

(c) Detailing each topic listed above into topic elements:

KM-04-KT02: Line inspections 50%		
TOPIC ELEMENT CODE	TOPIC ELEMENT TITLE	% OF TIME TO BE SPENT
KT0201	Inspecting environmental conditions	25
KT0202	Inspecting structures	25
KT0203	Inspecting hardware from ground level	25
KT0204	Inspecting line components	25

(d) Internal Assessment Criteria (IAC) and Weight

IAC CODE	IAC DESCRIPTION	% OF TIME TO BE SPENT
IAC0101	Explain the process and requirements for inspecting environmental conditions	25
IAC0102	Explain the process and requirements for inspecting structures	25
IAC0103	Explain the process and requirements for inspecting hardware from ground level	25
	Explain the process and requirements for inspecting line components	25

3.4.2 Criteria for accreditation

Physical Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
EQUIPMENT & TOOLS	<ul style="list-style-type: none"> Physical training facilities (or if using a hybrid or e-learning model – software or internet platform) conducive to hosting the number of learners comfortably and safely for the duration of this module. Facilities that meet the minimum requirements for the comfort of learners (ablutions, hand washing facilities, sheltered from the elements etc.). All learning materials, lesson plans, workbooks, assessment guides to cover the related topics. All learning materials, lesson plans, workbooks, assessment guides to cover the related topics. Internal summative assessment instruments.
CONSUMABLES	<ul style="list-style-type: none"> None

Human Resource Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
QUALIFICATIONS & EXPERIENCE	Qualification of lecturer/facilitator (SME): <ul style="list-style-type: none"> Qualified as an Electrical Line Mechanic
FACILITATOR/LEARNER RATIO	1: maximum 20

Legal Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none">• CIPC registered entity.• SARS Tax compliant.• Compliant and current health and safety audit report.• Relevant labour legislation visible in facility or on platform (as required by current legislation).• POPIA compliant.

Additional Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)
None.

3.4.3 Exemptions

None

4. Practical Skill Module (PM) Specifications:

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-PM-01	Prepare for and construct low and medium voltage (LV and MV) structures	2	5	Face to face
900523-000-00-PM-02	Handle and install overhead conductors	2	8	Face to face
900523-000-00-PM-03	Install low and medium voltage (LV and MV) infrastructure components	2	10	Face to face
900523-000-00-PM-04	Inspect and maintain lines and structures	2	2	Face to face

Detailing Practical Module (PM) contents

4.1 900523-000-00-PM-01, Prepare for and construct low and medium voltage (LV and MV) structures, NQF Level 2, Credits 5

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-PM-01	Prepare for and4.1 construct low and medium voltage (LV and MV) structures	2	5	Face to face

4.1.1. Module Details

(a) Purpose of the Practical Skills Module:

The focus of the learning in this module is on providing the learner an opportunity to practice the skills required to excavate holes and plant poles and stays and construct LV/MV infrastructure.

The learner will be required to perform the activities listed below:

(b) List of Practical Skill Activities:

PRACTICAL SKILL CODE	ACTIVITY TITLE
PM-01-PS01	Construct LV/MV infrastructure
PM-01-PS02	Excavate holes and plant poles and stays

(c) Scope of each Practical Skill Activity:

PM-01-PS01: Construct LV/MV infrastructure
PRACTICAL SKILL ACTIVITY SCOPE OUTLINE:

Given drawings, tape measures, wood augers, insulators, threaded bolts, and general hand tools, the learner must be able to:	
PRACTICAL SKILL ACTIVITY ELEMENT CODES	PRACTICAL SKILL ACTIVITY ELEMENTS
PA0101	Identify required tools, equipment and PPE
PA0102	Assemble cross arms
PA0103	Install insulators
PA0104	Conduct house keeping

(d) Applied Knowledge that underpins the Practical Skill Activity

APPLIED KNOWLEDGE CODE	APPLIED KNOWLEDGE
AK0101	Identify required tools, equipment and PPE
AK0102	Assemble cross arms
AK0103	Install insulators
AK0104	Conduct house keeping

(e) Internal Assessment Criteria (IAC) for the Practical Skill Activity

IAC CODE	IAC DESCRIPTION
IAC0101	The correct tools equipment and PPE are selected
IAC0102	The cross arms are assembled according to the given drawings
IAC0103	The required insulators are identified, selected and installed according to drawing specifications
IAC0104	All tools equipment cleaned and returned, and wastage disposed of

(c) Scope of each Practical Skill Activity:

PM-01-PS02: Excavate holes and plant poles and stays	
PRACTICAL SKILL ACTIVITY SCOPE OUTLINE	
Given a pig, shovel, and pole numbering equipment, the learner must be able to:	
PRACTICAL SKILL ACTIVITY ELEMENT CODES	PRACTICAL SKILL ACTIVITY ELEMENTS
PA0201	Identify required tools, equipment and PPE
PA0202	Excavate pole and stay holes
PA0203	Plant poles and stays

PA0204	Conduct housekeeping
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(d) Applied Knowledge that underpins the Practical Skill Activity

APPLIED KNOWLEDGE CODE	APPLIED KNOWLEDGE
AK0201	Reading instructions to excavate holes and plant poles and stays

(e) Internal Assessment Criteria (IAC)

IAC CODE	IAC DESCRIPTION
IAC0201	Pole and stay holes are excavated to the given depth
IAC0202	The poles and stays are correctly positioned or attached to the crane
IAC0203	Holes are backfilled and compacted
IAC0204	Pole numbers are recorded according to drawing specifications
IAC0205	Area cleaned

4.1.2. Criteria for accreditation

Physical Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
EQUIPMENT & TOOLS	<ul style="list-style-type: none"> Physical training facilities (or if using a hybrid or e-learning model – software or internet platform) conducive to hosting the number of learners comfortably and safely for the duration of this module. Facilities that meet the minimum requirements for the comfort of learners (ablutions, hand washing facilities, sheltered from the elements etc.). Record keeping systems to capture learner data and issue a statement of results. The provider must have practical guidebooks with clear instructions on activities. The provider must have, tape measures, wood augers, a pig, shovel, general hand tools, drawings, insulators, threaded bolts, and pole numbering equipment as stated in the given statements. The provider must have logbooks/sheets to capture learner progress against the practical application activities.
CONSUMABLES	<ul style="list-style-type: none"> None

Human Resource Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
QUALIFICATIONS & EXPERIENCE	Qualification of facilitator: <ul style="list-style-type: none"> Qualified as an Electrical Line Mechanic
FACILITATOR/LEARNER RATIO	1: maximum 10

Legal Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none">• CIPC registered entity.• SARS Tax compliant.• Compliant and current health and safety audit report.• Relevant labour legislation visible in facility or on platform (as required by current legislation).• POPIA compliant.

Additional Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	None.

4.1.3 Exemptions

None

4.2 900523-000-00-PM-02, Handle and install overhead conductors, NQF Level 2, Credits 8

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-PM-02	Handle and install overhead conductors	2	8	Face to face

4.2.1. Module Details

(a) Purpose of the Practical Skills Module:

The focus of the learning in this module is on providing the learner an opportunity to practice the skills required to handle and install overhead conductors.

The learner will be required to perform the activities listed below:

(b) List of Practical Skill Activities:

PRACTICAL SKILL CODE	ACTIVITY TITLE
PM-02-PS01	Handle conductors
PM-02-PS02	Install overhead conductors

(c) Scope of each Practical Skill Activity:

PM-02-PS01: Handle conductors
PRACTICAL SKILL ACTIVITY SCOPE OUTLINE:

Given safety equipment (gloves, safety goggles, climbing shoes for climbing, and fall arrest system, and safety belts), tensioning tools (dynamometer), conductor drum stands, and running out wheels, the learner must be able to:	
PRACTICAL SKILL ACTIVITY ELEMENT CODES	PRACTICAL SKILL ACTIVITY ELEMENTS
PA0101	Identify required tools, equipment and PPE and PPC
PA0102	Handle and move conductor drum
PA0103	Install conductor stands
PA0104	Ascend and descend poles wearing climbing shoes and FAS
PA0105	Install conductor running wheels
PA0106	Install the conductor
PA0107	Conduct housekeeping

(d) Applied Knowledge that underpins the Practical Skill Activity

APPLIED KNOWLEDGE CODE	APPLIED KNOWLEDGE
AK0101	Safety regarding tensioning (dynamometer)
AK0102	Use of climbing shoes
AK0103	Use of FAS

(e) Internal Assessment Criteria (IAC) for the Practical Skill Activity

IAC CODE	IAC DESCRIPTION
IAC0101	Climbing shoes are correctly selected and used without damage to self
IAC0102	The drum is correctly slinged and secured for transportation
IAC0103	The drum is installed on the stand in the correct rotation direction and the cable /conductor protection is removed.
IAC0104	The pole was ascended and descended safely

(c) Scope of each Practical Skill Activity:

PM-02-PS02 Install overhead conductors
PRACTICAL SKILL ACTIVITY SCOPE OUTLINE
Given safety equipment (gloves, safety goggles, climbing shoes for climbing, and fall arrest system, and safety belts), tensioning tools (dynamometer), conductor drum stands, running out wheels, and cleaning materials the learner must be able to:

PRACTICAL SKILL ACTIVITY ELEMENT CODES	PRACTICAL SKILL ACTIVITY ELEMENTS
PA0201	Identify required tools, equipment and PPC
PA0202	String and tension conductors
PA0203	Regulate conductors speed
PA0204	Conduct housekeeping

(d) Applied Knowledge that underpins the Practical Skill Activity

APPLIED KNOWLEDGE CODE	APPLIED KNOWLEDGE
AK0201	Stringing and tensioning techniques
AK0203	Regulating conductors speed

(e) Internal Assessment Criteria (IAC)

IAC CODE	IAC DESCRIPTION
IAC0201	The conductor is tensioned to fit the required distance without any damage
IAC0202	The cable drum speed is controlled and coordinated and jams avoided

4.2.2. Criteria for accreditation

Physical Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
EQUIPMENT & TOOLS	<ul style="list-style-type: none"> Physical training facilities (or if using a hybrid or e-learning model – software or internet platform) conducive to hosting the number of learners comfortably and safely for the duration of this module. Facilities that meet the minimum requirements for the comfort of learners (ablutions, hand washing facilities, sheltered from the elements etc.). Record keeping systems to capture learner data and issue a statement of results. The provider must have practical guidebooks with clear instructions on activities (including templates). The provider must have safety equipment (gloves, safety goggles, climbing shoes for climbing, and fall arrest system, and safety belts), tensioning tools (dynamometer), conductor drum stands, and running out wheels as stated in the given statements The provider must have logbooks/sheets to capture learner progress against the practical application activities
CONSUMABLES	<ul style="list-style-type: none"> The provider must have cleaning materials.

Human Resource Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
QUALIFICATIONS & EXPERIENCE	Qualification of facilitator: <ul style="list-style-type: none">• Qualified as an Electrical Line Mechanic
FACILITATOR/LEARNER RATIO	1: maximum 10

Legal Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none">• CIPC registered entity.• SARS Tax compliant.• Compliant and current health and safety audit report.• Relevant labour legislation visible in facility or on platform (as required by current legislation).• POPIA compliant.

Additional Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	None.

4.2.3 Exemptions

None

4.3 900523-000-00-PM-03, Install low and medium voltage (LV and MV) infrastructure components, NQF Level 2, Credits 10

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-PM-03	Install low and medium voltage (MV) infrastructure components	2	10	Face to face

4.3.1. Module Details

(a) Purpose of the Practical Skills Module:

The focus of the learning in this module is on providing the learner an opportunity to practice the skills required to install pole mounted equipment and pre-paid split metering base and cable.

The learner will be required to perform the activities listed below:

(b) List of Practical Skill Activities:

PRACTICAL SKILL CODE	ACTIVITY TITLE
PM-03-PS01	Install pole mounted equipment
PM-03-PS02	Install pre-paid split metering base and cable

(c) Scope of each Practical Skill Activity:

PM-03-PS01 Install pole mounted equipment	
PRACTICAL SKILL ACTIVITY SCOPE OUTLINE:	
Given drawings, reclosers, voltage regulators, capacitor banks, metering units, equipment for earth electrode resistance testing, crimp connectors, hand tools (including wood augers, spanners, hammers, screw drivers, crimping tools), crimp connectors, nuts and bolts, nails, and screws, the learner must be able to:	
PRACTICAL SKILL ACTIVITY ELEMENT CODES	PRACTICAL SKILL ACTIVITY ELEMENTS
PA0101	Install pole mounted transformers
PA0102	Install reclosers
PA0103	Install voltage regulators
PA0104	Install capacitor banks
PA0105	Install metering units
PA0106	Crimp connectors for (LV/MV) lines
PA0107	Set up equipment for earth electrode resistance testing

(d) Applied Knowledge that underpins the Practical Skill Activity

APPLIED KNOWLDEGE CODE	APPLIED KNOWLEDGE
AK0101	Installation processes
AK0102	Drawing interpretations

(e) Internal Assessment Criteria (IAC) for the Practical Skill Activity

IAC CODE	IAC DESCRIPTION
IAC0101	Pole mounted transformers and all associated equipment are correctly installed according to drawing specifications
IAC0102	Equipment for earth electrode resistance testing correctly set up according to the drawing specifications

(c) Scope of each Practical Skill Activity:

PM-03-PS02 Install pre-paid split metering base and cable	
PRACTICAL SKILL ACTIVITY SCOPE OUTLINE:	
Given, drawings, pre-paid split metering devices, hand tools (including wood augers, drills and drill bits, spanners, screw drivers), and screws, the learner must be able to:	
PRACTICAL SKILL ACTIVITY ELEMENT CODES	PRACTICAL SKILL ACTIVITY ELEMENTS
PA0201	Identify required tools, equipment and PPC
PA0202	Install pre-paid split metering base and cable
PA0203	Conduct housekeeping

(d) Applied Knowledge that underpins the Practical Skill Activity

APPLIED KNOWLDEGE CODE	APPLIED KNOWLEDGE
AK0201	Installation processes
AK0202	Drawing interpretations

(e) Internal Assessment Criteria (IAC) for the Practical Skill Activity

IAC CODE	IAC DESCRIPTION
IAC0101	Pre-paid split metering base and cable is correctly positioned and installed as per drawing

4.3.2. Criteria for accreditation

Physical Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
EQUIPMENT & TOOLS	<ul style="list-style-type: none"> Physical training facilities (or if using a hybrid or e-learning model – software or internet platform) conducive to hosting the number of learners comfortably and safely for the duration of this module. Facilities that meet the minimum requirements for the comfort of learners (ablutions, hand washing facilities, sheltered from the elements etc.). Record keeping systems to capture learner data and issue a statement of results. The provider must have practical guidebooks with clear instructions on activities (including templates). The provider must have reclosers, voltage regulators, capacitor banks, metering units, pre-paid split metering devices, equipment for earth electrode resistance testing, crimp connectors, and hand tools (including wood augers, drills, spanners, hammers, screw drivers, crimping tools), drawings, drill bits, crimp connectors, nuts and bolts, nails, and screws as stated in the given statements. The provider must have logbooks/sheets to capture learner progress against the practical application activities
CONSUMABLES	<ul style="list-style-type: none"> None

Human Resource Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
QUALIFICATIONS & EXPERIENCE	Qualification of facilitator: <ul style="list-style-type: none"> Qualified as an Electrical Line Mechanic
FACILITATOR/LEARNER RATIO	1: maximum 10

Legal Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none"> CIPC registered entity. SARS Tax compliance. Compliant and current health and safety audit report. Relevant labour legislation visible in facility or on platform (as required by current legislation). POPI policy.

Additional Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	None.

4.3.3 Exemptions

None

4.4 900523-000-00-PM-04, Inspect and maintain lines and structures, NQF Level 2, Credits 2

MODULE CODE	MODULE TITLE	NQF LEVEL	CREDITS	MODE OF DELIVERY
900523-000-00-PM-04	Inspect and maintain lines and structures	2	2	Face to face

4.4.1. Module Details

(a) Purpose of the Practical Skills Module:

The focus of the learning in this module is on providing the learner an opportunity to practice the skills required to conduct line, line component, and pole inspections.

The learner will be required to perform the activities listed below:

(b) List of Practical Skill Activities:

PRACTICAL SKILL CODE	ACTIVITY TITLE
PM-04-PS01	Conduct pole inspections
PM-04-PS01	Conduct line and line component inspection

(c) Scope of each Practical Skill Activity:

PM-04-PS01: Conduct pole inspections	
PRACTICAL SKILL ACTIVITY SCOPE OUTLINE:	
Given drawing specifications, and inspection sheet or data unit or ADA, the learner must be able to:	
PRACTICAL SKILL ACTIVITY ELEMENT CODES	PRACTICAL SKILL ACTIVITY ELEMENTS
PA0101	Inspect poles for defects
PA0102	Inspect poles for plumbness
PA0103	Inspect pole numbering for correctness

(d) Applied Knowledge that underpins the Practical Skill Activity

APPLIED KNOWLEDGE CODE	APPLIED KNOWLEDGE
AK0101	Pole inspection techniques

(e) Internal Assessment Criteria (IAC) for the Practical Skill Activity

IAC CODE	IAC DESCRIPTION
IAC0101	Wooden poles are inspected for defects, plumbness and numbering and inspection correctly recorded

(c) Scope of each Practical Skill Activity:

PM-04-PS02: Conduct line and line component, inspection	
PRACTICAL SKILL ACTIVITY SCOPE OUTLINE:	
Given drawing specifications, and inspection sheet or data unit or ADA, the learner must be able to:	
PRACTICAL SKILL ACTIVITY ELEMENT CODES	PRACTICAL SKILL ACTIVITY ELEMENTS
PA0201	Identify required tools, equipment and PPC
PA0202	Inspect environmental conditions
PA0203	Inspect structures
PA0204	Inspect hardware of ground level components
PA0205	Inspect line components
PA0206	Conduct housekeeping

(d) Applied Knowledge that underpins the Practical Skill Activity

APPLIED KNOWLEDGE CODE	APPLIED KNOWLEDGE
AK0201	Line and line component inspection techniques

(e) Internal Assessment Criteria (IAC) for the Practical Skill Activity

IAC CODE	IAC DESCRIPTION
IAC0201	Structures, hardware of ground level components and lines are visually inspected and correctly recorded

4.4.2. Criteria for accreditation

Physical Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
EQUIPMENT & TOOLS	<ul style="list-style-type: none"> Physical training facilities (or if using a hybrid or e-learning model – software or internet platform) conducive to hosting the number of learners comfortably and safely for the duration of this module. Facilities that meet the minimum requirements for the comfort of learners (ablutions, hand washing facilities, sheltered from the elements etc.). Record keeping systems to capture learner data and issue a statement of results. The provider must have practical guidebooks with clear instructions on activities (including templates). The provider must have drawing specifications, and or data unit or ADA as stated in the given statements. The provider must have logbooks/sheets to capture learner progress against the practical application activities
CONSUMABLES	<ul style="list-style-type: none"> The provider must have inspection sheets if no recording devices are used.

Human Resource Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
QUALIFICATIONS & EXPERIENCE	Qualification of facilitator: <ul style="list-style-type: none"> Qualified as an Electrical Line Mechanic
FACILITATOR/LEARNER RATIO	1: maximum 10

Legal Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	<ul style="list-style-type: none"> CIPC registered entity. SARS Tax compliance. Compliant and current health and safety audit report. Relevant labour legislation visible in facility or on platform (as required by current legislation). POPI policy.

Additional Requirements:

SKILLS DEVELOPMENT PROVIDER (SDP)	
	None.

4.4.3 Exemptions

None

5 POSSIBLE SEQUENCING AND INTEGRATION

Listing and order of modules in the sequence in which these modules will follow each other during delivery/implementation. This allows for integration of KM, AM (PM/ WM) as work logically flows.

ORDER	MODULE TITLE	MODULE CODE	LEVEL	CREDITS
1.	Workplace health and safety	900523-000-00-KM-01	2	8
2.	Tools, equipment and electrical work	900523-000-00-KM-02	2	5
3.	Prepare for and construct low and medium voltage (LV and MV) structures	900523-000-00-PM-01	2	5
4.	Low and medium voltage (LV and MV) construction	900523-000-00-KM-03	2	10
5.	Handle and install overhead conductors	900523-000-00-PM-02	2	8
6.	Install low and medium voltage (LV and MV) infrastructure components	900523-000-00-PM-03	2	10
7.	Medium voltage (MV) structure and line inspection	900523-000-00-KM-04	2	1
8.	Inspect and maintain lines and structures	900523-000-00-PM-04	2	2