


External Assessment Specifications Document				
<b>Curriculum Code</b>	<b>Qualification Title</b>		<b>NQF Level</b>	
671101000	Occupational Certificate: Electrician		4	
<b>Assessment Quality Partner</b>	<b>Name</b>	<b>E-mail</b>	<b>Phone</b>	
	National Artisan Moderation Body (NAMB)	louw.n@dhet.gov.za	011 206 1015	

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## **1 ASSESSMENT STRATEGY**

### **1.1 Assessment Model**

An external integrated summative assessment, conducted through the relevant QCTO Assessment Quality partner is required for the issuing of this qualification. The external integrated summative assessment will focus on the exit level outcomes and associated assessment criteria.

The external assessment model requires that the external assessment will be conducted through practical task at an accredited trade test centre. The practical tasks will be concluded at an accredited assessment centre and marked by registered assessors. The trade test will be conducted over a period of two working days.

### **1.2 Qualification Purpose**

The purpose of this qualification is to prepare a learner to operate as an **Electrician**.

Electricians plan, prepare install, test, connect commission, maintain, alter and repair electrical equipment, wiring and control systems and apply the knowledge and skills obtained, in a variety of contexts.

A qualified learner will be able to:

- Plan and prepare work site, equipment, tools, consumables and materials for electrical activities and operations. Install, wire and connect electrical equipment and control systems.
- Test and inspect electrical equipment, control systems and installations.
- Commission control systems and installations. Maintain and repair electrical equipment, control systems and installations.

### **1.3 Qualification Outcomes**

- 1 Plan and prepare work site, equipment, tools, consumables and materials for electrical activities and operations.
- 2 Install, wire and connect electrical equipment and control systems.
- 3 Test and inspect electrical equipment, control systems and installations.
- 4 Commission control systems and installations.
- 5 Maintain and repair electrical equipment, control systems and installations.

### **1.4 Assessment Standards**

#### **1.4.1 Assessment Standards for the Qualification**

##### ***Integrated Assessment Focus Area 1***

The ability to plan and prepare work site, equipment, tools, consumables and materials for electrical activities and operations

##### ***Associated Assessment Criteria***

- Risk assessments, including work related hazards and ergonomics, are carried out and reports completed as per statutory requirements.
- Evidence of mitigation is observed in accordance with standard operating procedures
- Approved work permit or other documentation is completed to reflect risk assessment conducted in accordance with approval procedures
- The relevant tools, material and equipment were correctly listed and quantities recorded in accordance with the task specification
- The correct human resources were listed that meet the job specification
- The work flow / work order was correctly analysed and applied in accordance with the task specification
- Worksite is prepared in terms of the procurement of resources, preparation and transportation of resources and the preparation equipment, tools, consumables and materials
- Demonstrate knowledge and understanding of planning and preparation of work site, equipment, tools, consumables and materials for electrical activities and operations

##### ***Integrated Assessment Focus Area 2***

The ability to install, wire and connect electrical equipment and control systems

##### ***Associated Assessment Criteria***

- The correct wire ways are selected in accordance with relevant regulations and codes that meet the operational conditions of the installation.
- The correct installation methods are selected in accordance with relevant regulations and codes, job instruction and environmental requirements.
- Tools, material and equipment are safely and correctly used while adhering to worksite and workshop safety procedures.
- Personal protective equipment are correctly selected and used according to statutory requirements.

- Power tools are selected and used correctly and safely while adhering fully to workplace safety regulations.
- Wireways are installed in accordance with design, layout, termination, joining and bonding requirements
- Electrical equipment and control systems are installed, wired and connected in accordance with the design requirements
- Demonstrate knowledge and understanding of installing, wiring and connecting electrical equipment and control systems

### ***Integrated Assessment Focus Area 3***

The ability to test and inspect electrical equipment, control systems and installations

#### ***Associated Assessment Criteria***

- Operational procedures are correctly interpreted and applied in accordance with installation specifications
- Inspection report that confirms the correctness of the installation are completed and submitted in accordance with the requirements of relevant regulations and codes and relevant workshop practices.
- All terminations and connections are inspected for compliance with relevant regulations and codes.
- The installation's functionality is inspected for compliance with relevant regulations and codes and/or the relevant manufacturer's specifications.
- Work Instructions and testing procedures are correctly interpreted and applied in accordance with workshop practices
- Test results are correctly interpreted and recorded in accordance with relevant regulations and codes.
- A test report that confirms the correctness of the installation is completed in accordance with relevant regulations and codes and relevant workshop practices.
- Personal protective equipment are selected and correctly used in accordance with the relevant subsection of the OHS Act and the Mines Health and Safety Act.
- The selected equipment are isolated and locked out.
- Demonstrate knowledge and understanding of testing and inspecting electrical equipment, control systems and installations

### ***Integrated Assessment Focus Area 4***

The ability to commission control systems and installations

***Associated Assessment Criteria***

- Work Instructions and testing procedures are correctly interpreted and applied in commissioning control systems and installations.
- Risks are identified and mitigated in accordance with risk management procedures
- A test report that confirms the correctness of the installation is completed in accordance with relevant statutory requirements.
- The correct tools and testing equipment including hand tools, multimeters, insulation tester and tong tester are used and isolating and energizing processes are followed in commissioning control systems and installations
- The relevant commissioning tests are completed according to relevant regulations
- Electrical installation or control system are isolated according to procedures
- Operating procedures and electrical diagrams are interpreted according to manufacturer's specifications.
- The correct electrical testing and fault finding procedures were applied.
- Defects are rectified as per installation requirements.
- Repairs are recorded and reported as per reporting procedures
- Measurements and observations are interpreted and captured accurately according to manufacturer's specifications
- All the relevant units/variables are recorded accurately
- Hand-over documents are completed as per hand-over procedures
- Demonstrate knowledge and understanding of commissioning control systems and installations

***Integrated Assessment Focus Area 5***

The ability to maintain and repair electrical equipment, control systems and installations

***Associated Assessment Criteria***

- Correct work instructions are followed and correct documentation including checklists were obtained in accordance with relevant workshop procedures
- Correct tools and testing instruments are selected and used in the maintenance and repair of electrical equipment, control systems and installations

- Faultfinding procedures are followed, fault finding techniques are applied and electrical schematics and drawings are interpreted in accordance with policies and procedures
- Functionality of components inspected in accordance with manufacturers specifications
- Faults are correctly identified and causes are interpreted in accordance with fault finding procedures
- Electrical installation or control system are correctly and safely isolated according to isolating procedures
- Operating procedures and electrical diagrams are correctly interpreted according to manufacturer's specifications.
- Identified faults are correctly rectified to the original operating status
- Risks associated with live testing are correctly identified and safety precautions taken.
- The correct electrical testing procedures were applied.
- Re-commissioning tests are done and complied with standard operating procedures
- Documentation are correctly completed according to recording procedures
- Causes are correctly interpreted and feedback given within the prescribed time frame
- Demonstrate knowledge and understanding of maintaining and repairing electrical equipment, control systems and installations

#### **1.4.2 Assessment Standards for Phases**

No phase tests are applicable

#### **1.4.3 Assessment Standards for Part Qualifications**

No Part Qualifications are applicable

### **2. ASSIGNMENTS TO BE EVALUATED EXTERNALLY**

No assignments must be produced for external evaluation

### **3. CRITICAL ASPECTS OF THE INTERNAL ASSESSMENTS BE ASSESSED EXTERNALLY**

No internal assessments to be re-assessed during external assessment

### **4. CRITERIA FOR THE REGISTRATION OF ASSESSORS**

- Qualified Electrician
- Qualified and registered assessor
- Minimum of five (5) years experience as qualified electrician
- Registered with NAMB as an assessor

## **5. FOUNDATIONAL LEARNING**

Foundational learning competence is a pre-requisite for the awarding of this qualification.



## 6 ELIGIBILITY REQUIREMENTS FOR THE EXTERNAL ASSESSMENT

In order to qualify for the external summative assessment learners must have a copy of a completed and signed Statement of Work Experience as well as proof of successful completion of the following subjects and modules or alternative programmes where applicable.

### 6.1 Qualification

Proof of Knowledge Modules				Or	Proof of Alternative Programmes			
<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>		<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>
671101000-KM-01	Health, Safety, Quality and Legislation	4	5	Or				
671101000-KM-02	Tools, Equipment and Materials	4	8					
671101000-KM-03	Electricity and electronics	4	13					
671101000-KM-04	Industry Context	3	2					
671101000-KM-05	Wire ways and wiring	4	11					
671101000-KM-06	Rotating electrical machinery	4	13					
671101000-KM-07	Electrical supply systems and components	4	31					
671101000-KM-08	Low Voltage protection	4	5					
671101000-KM-09	Fault Finding	4	3					

Proof of Practical Skill Modules				Or	Proof of Alternative Programmes			
<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>		<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>
671101000-PM-01	Use hand and power tools	3	22	Or				

671101000-PM-02	Planning and preparation process for the wiring, connection, testing, inspecting, commissioning and maintaining of electrical installations and control systems	3	5	Or				
671101000-PM-03	Prepare worksite set up for installing, wiring and connecting electrical equipment and control systems	3	3	Or				
671101000-PM-04	Install wire-ways	4	5					
671101000-PM-05	Install, wire and connect electrical equipment and control systems	4	38					
671101000-PM-06	Conduct pre-commission inspection (power off;) fault find and test new and existing installations	4	5					
671101000-PM-07	Carry out commissioning tests	4	13					
671101000-PM-08	Fault find and repair electrical control systems and electrical installations	4	22					

**And**

**Statement of Work experience**

**6.2 Phase 1**

No Phase Tests applicable

**6.3 Part Qualification**

No Part Qualifications applicable