

NOCC-A21 Electrician: Competence Package

Relevant Occupation /trade title: Electrician			SAQA ID: 91761		
Learning Area 4: Read, interpret and revise engineering, schematics drawings and documentation			Total Hours:		40
Learning Project 3: Identify, read and interpret electrical schematic drawings and specifications			Total Hours:		8
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		<ul style="list-style-type: none"> LA1 (LP 10) 			
Learning project description: Identify, read and interpret electrical diagrams and specifications (schematic and wiring diagrams, domestic, industrial and commercial).					
Activity phase	Practical Skills Modules Content	Underpinning Knowledge Module Content	Work Experience Module Content (Exposure to be given)	Didactical-methodological advice	Learning materials/Tools and Equipment
Reference to QCTO Curriculum	PM-02-PS02	KM-None	WM-None		
Planning/ Preparation	<p><u>Provide access to (Given):</u> Electrical diagrams specifications (schematic and wiring diagrams, domestic, industrial and commercial) and equipment.</p> <p><u>Apprentices must be able to do/perform the following (hard and soft) skills:</u></p> <p>Prepare to use electrical schematic drawings and specifications</p> <ul style="list-style-type: none"> Determine the need for drawings and specifications from the characteristics of the work to be undertaken. Follow established routines to obtain drawings and 	<p><u>Knowledge of:</u></p> <p>Electrical circuit and wiring diagrams encompassing:</p> <ul style="list-style-type: none"> Types of electrical drawings: block and circuit wiring diagrams Purpose and application of block and circuit wiring diagrams IEC standard symbols used to represent components on electrical diagrams Wiring standards(statutory requirements) used in 	<p><u>Under supervision:</u></p> <ul style="list-style-type: none"> Access, select and view drawings Extract and use information from drawings to define scope of work Discuss appropriateness/ correctness of electrical drawing specifications with supervisor Issue latest amendments of drawings to the relevant personnel Identify and interpret component 	<ul style="list-style-type: none"> Instructions/Lectures Internet research Site visits Observation method with checklist. Case studies Role play 	<p>Print materials, electronic files, software applications incl.:</p> <ul style="list-style-type: none"> SANS Drawing Standards Software to view electrical circuit and wiring diagrams Electrical circuit and wiring diagrams required as per work specifications Text books Training manuals for trainers and apprentices incl.

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	<p>specifications required for the work to be undertaken</p> <ul style="list-style-type: none"> • Determine job requirements from work instructions • Interpret and read job specifications • Select drawings and specifications relevant to information required • Identify connections and integrity of equipment/ systems/ components/ appliances to be installed or maintained • Identify and check correct equipment for viewing and processing of drawings and specifications 	<p>the features of circuit and wiring diagrams</p> <ul style="list-style-type: none"> • Identification of cable/conductor type, origin and route from a cable/conductor schedule • Interpret and verify a cable/conductor schedule for a given installation • Interpret and verify the drawing to determine the sequence of operation • Connecting equipment using circuit and wiring diagrams • Work procedures with regards to appropriate guidelines (filing systems) 	<p>requirements</p> <ul style="list-style-type: none"> • Interpret dimensions, instructions, symbols and conventions • Use the drawings to explain and communicate the information content. • Wire according to the wiring schematic diagrams. • Safeguard and store drawings • Engage in regular housekeeping activities, drawing tool and equipment maintenance • Provide work documentation, verbal and written reports as required by the company 		<p>multimedia software</p> <ul style="list-style-type: none"> • Set of presentation aids (videos, slides) for overhead or LED/LCD projectors <p>Stationary machinery, incl.:</p> <ul style="list-style-type: none"> • Computer system • Printer, plotter • Scanner • Photocopy machine • Tracing light box • Flat file cabinet for blueprints/drawings
<p>Implementation/ Execution</p>	<p>Interpret and use electrical circuit and wiring diagram and specifications to obtain job information</p> <ul style="list-style-type: none"> • Select drawings and specifications appropriate to the work being undertaken • Interpret and verify drawings and specifications using knowledge of drawing layouts, drawing standards and symbols • Extract equipment, tools, materials, component layout and sequencing arrangements from drawings and specifications for application to work undertaken • Review specifications to ascertain their format and 				<p>Measuring and testing instruments incl.:</p> <ul style="list-style-type: none"> • Steel measuring tape • Acrylic Rulers • Reduction scale rulers

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	<p>where information relevant to the work to be undertaken is located</p> <ul style="list-style-type: none"> • Interpret information given in specifications in relation to the work to be conducted 				
Evaluation/ Documentation/ Housekeeping	<p>Clean up work area and store files</p> <ul style="list-style-type: none"> • Store and file drawings securely • Conduct housekeeping activities • Care for tools and equipment used to view, archive, print-out or copy drawings • Report work progress to appropriate personnel • Complete work documentation 				
Total	Hours: 8				
Specialisation additions					
Assessment guidance					
<p>Criteria for assessment:</p> <ul style="list-style-type: none"> • Reading and interpreting electrical wiring diagrams/ schematic drawings to required specifications • Understanding of symbols and standards and their application • Communicating by using electrical wiring diagrams/ schematic drawings. • Compiling material lists 					