

NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician			SAQA ID: 91761		
Learning Area 1: Prepare for work			Total Hours:		264
Learning Project 9: Take necessary precautions with electrical protection measures to ensure safety in electricity supply systems			Total Hours:		16
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		LA 1 - LP: 1, 7, 8			
Learning project description: Take necessary precautions with electrical protection measures to ensure safety in electricity supply systems					
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: None	KM-05-KT03 KM-08-KT01	WM: None		
Planning/Preparation	<p><u>Provide access to (Given):</u> Electrical scenarios, in which electrical protection measures are required.</p> <p><u>Apprentices must be able to do/perform the following (hard and soft) skills:</u></p> <ul style="list-style-type: none"> Identify the different electrical faults from given scenarios Determine the name, key purpose, main area of application of different protection devices as well as their functionality Identify potential electrical hazards/dangers from given scenarios Analyse and list the potential dangers of electricity to the human body 	<p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> Overcurrent protection Earth fault protection Protection devices related to all of the above (e.g. fuses, circuit breakers, earth leakage unit three and single phase, isolator etc.) Dangers of electricity and effects on the human body Hazards and risks in an electrical installation Protection against direct and indirect contact Protection against overload and short circuit current Potential hazards related to protection devices and components Probable causes of fault and appropriate corrective 	<p><u>Under supervision:</u></p> <ul style="list-style-type: none"> Explain the use of different protection devices to mentor Explain the different possible electrical faults and related protection devices for remedial action Check on the availability of a first aid kit and report back on its completeness when it comes to electrical injuries 	Lecture, presentations, You-Tube videos Practical demonstration, Practical group work Individual practice sessions under supervision	<p>Print materials, electronic files, software applications incl.:</p> <ul style="list-style-type: none"> Textbooks Teaching and learning manuals incl. multimedia applications <p>PPE:</p> <ul style="list-style-type: none"> Safety overall Safety boots
Implementation/Execution	<ul style="list-style-type: none"> Apply knowledge of direct and indirect contact and list the 				

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	<p>respective protection measures for prevention</p> <ul style="list-style-type: none"> List the components of protection systems Explain the advantages of the different protective devices under consideration of safety, economy and accuracy aspects Identify electrical injuries and explain relevant first aid measures Assess existing electrical installation for protection devices Explain the principle of selectivity Determine protection device characteristics based on data sheets 	<p>methods</p> <ul style="list-style-type: none"> Events that lead to system failure Safety procedures required to repair protection devices and components Review of LA 1 LP7 in relation to injuries and first aid measures 			
Evaluation/ Documentation	<ul style="list-style-type: none"> Evaluate work results against model answers Clean up and restore workstation 				
Total	Hours: 16				
Specialisation additions					
Assessment guidance					
<p>Criteria for assessment:</p> <ul style="list-style-type: none"> Correct identification and explanation of area of application of different protection devices Correct determination of electrical injuries and related first aid measures Correct identification of electrical dangers and possible faults 					