

NOCC-A21 Electrician: Competence Package

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

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