

NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician				SAQA ID: 91761	
Learning Area 12: Identify, construct and troubleshoot basic electronic circuits				Total Hours:	128
Learning Project 3: Construct basic electronic circuits				Total Hours:	40
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		<ul style="list-style-type: none"> LA12, LP1-2 			
Learning project description: Apprentices learn to construct basic electronic circuits.					
Activity phase	Practical Skills Modules Content	Underpinning Knowledge Module Content	Work Experience Module Content	Didactical-methodological advice	Learning materials/Tools and Equipment
Reference to QCTO Curriculum	PM-01-PS03, PM01-PS04	KM-03-KT02	WM-None		
Planning/Preparation	<p>Provide access to (Given): Veroboards, electronic components, datasheets, electronic drawings, materials and equipment as identified in last column;</p> <p>Apprentices must be able to do/perform the following (hard and soft) skills:</p> <ul style="list-style-type: none"> Read and interpret the electronic drawing Perform a risk assessment on the task Select appropriate components according to the electronic drawing Plan layout of components Identify the tools and materials required Plan sequence of tasks 	<p>Knowledge of:</p> <ul style="list-style-type: none"> Planning of the layout of a veroboard Sensitivity of electronic components (static) Soldering techniques on veroboards Use of oscilloscope Use of signal generator Safety precautions when working with electronic circuits Statutory requirements as per work conducted 	<p>Under supervision: <i>If the workplace allows for this exposure:</i></p> <ul style="list-style-type: none"> Solder electronic components (where applicable) 	Lecture, presentations DVDs, audio-visual Demonstrations Practical applications	<p>Print materials, electronic files, software applications incl.:</p> <ul style="list-style-type: none"> Training manuals for trainers and apprentices incl. multimedia software Set of presentation aids (videos, slides) for overhead or LED/LCD projectors Statutory requirements: SANS 10142-Part1 Municipal by-laws Datasheets or access to datasheets <p>Tools, equipment and materials incl.:</p> <ul style="list-style-type: none"> Soldering station Solder sucker Helping hands Magnifying glass Oscilloscope Signal generator/power
Implementation/Execution <u>Repair</u>	<ul style="list-style-type: none"> Prepare and mount components on veroboard Solder components according 				

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	<ul style="list-style-type: none"> to requirements • Test the completed electronic circuit with Oscilloscope 				<ul style="list-style-type: none"> supply • Measuring instruments • Standard electronic tools
Evaluation/ Documentation	<ul style="list-style-type: none"> • Document test results and calculate where necessary • Clean work area after completion of task in accordance with work site procedures and housekeeping standards 				<p>Materials:</p> <ul style="list-style-type: none"> • Veroboards • Resin/solder • <u>Electronic components:</u> <ul style="list-style-type: none"> • Resistor • Capacitor • Inductors • Semi-conductor devices • Diodes • Colour chart <p>PPE:</p> <ul style="list-style-type: none"> • Safety boots • Safety glasses
Total	Hours: 40				
Specialisation additions					
Assessment guidance					
<ul style="list-style-type: none"> • Self assessment • Group assessment • Theory test <p>Criteria for assessment:</p> <ul style="list-style-type: none"> • Correct identification and selection of electronic components • Neatness of layout • Method and neatness of soldering • Correct testing method and use of instruments • Functionality of circuit • Documentation of readings and calculations • Clean worksite after completion of task and equipment returned safely to store 					