

NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician			SAQA ID: 91761		
Learning Area 2: Identify, care and use of basic, trade-specific hand- & power tools and equipment			Total Hours:	192	
Learning Project 5: Use hand and power tools to fabricate mechanical installation parts in an electrical environment			Total Hours:	40	
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		<ul style="list-style-type: none"> • LA 1 (LP 1,2, 3, 7, 9, 12) • LA 2 (LP 2) 			
Learning project description: Use hand and power tools to fabricate mechanical installation parts in an electrical environment					
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	PM01-PS01 PM-01-PS02	KM-02-KT01	WM: None		
Planning/ Preparation/	<p><u>Provide access to (Given):</u></p> <p>Drawings of mechanical installation part(s) to be fabricated, required materials and tools (see. Spec.)</p> <p><u>Apprentices must be able to do/perform the following (hard and soft) skills:</u></p> <p>Identify and select hand and power tools</p> <ul style="list-style-type: none"> • Read drawings and/or instructions of task • Perform risk assessment on the task • Determine safe working procedures and tool operations 	<p><u>Knowledge of:</u></p> <ul style="list-style-type: none"> • PPE needed for the task • Different types of materials and their properties • Different types of hand and power tools and their uses needed for the task • Safety precautions and risk assessment regarding the use of hand and power tools specific to the task • General safety regulations • OHS Act • Standard operating procedures related to the task <p>Measuring and marking out techniques encompassing:</p>	<p><u>Under supervision:</u></p> <ul style="list-style-type: none"> • Perform risk assessment on the use of hand- and power tools • Be actively involved in work processes using hand and power tools (e.g. cutting, drilling, threading, filing, bending, connecting) • Inspect equipment and check registers • Store hand and power tools, record and report any defects • Engage in regular housekeeping activities, tool and equipment maintenance 	<ul style="list-style-type: none"> • Research /Desk study • Case studies /scenarios • Technical discussions • Group work • Lecture/ instructions • Presentations • Textbook work 	<p>Print materials, electronic files, software applications incl.:</p> <ul style="list-style-type: none"> • OHS Act • Text books • Training manuals for trainers and apprentices incl. multimedia software • Worksheets for fabrication of projects • Set of presentation aids (videos, slides) for overhead or LED/LCD projectors <p>Stationary machinery, incl.:</p> <ul style="list-style-type: none"> • Table/pedestal drilling machine

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	<ul style="list-style-type: none"> • Identify the correct hand or power tool for fabrication • Inspect tools for damages and report any faults to appropriate personnel • Select equipment needed to hold materials or support tool application • Plan appropriate use of hand- and power tools • Identify material needed for the task • Select and wear personal protective equipment (PPE) 	<ul style="list-style-type: none"> • Reasons for measuring and marking out • Tools used for marking out • Measuring and marking out a project accurately following correct procedures. • Reducing waste when marking out • • Techniques in using vernier callipers • Using vernier callipers to measure engineering components 			<ul style="list-style-type: none"> • Pedestal grinding machine • Table/ pedestal marking/ inspection table <p>Hand- & power tools incl.: Electrician's tool box with standard tool set Workbench/ workshop store tool set including:</p> <ul style="list-style-type: none"> – Hacksaw – Drill bits – Taps & dies – Files – Marking tools – Steel square – Scriber <p>PPE:</p> <ul style="list-style-type: none"> – Eye protection – Hearing protection – Gloves – Safety boots – Safety clothing <p>Measuring and testing instruments incl.:</p> <ul style="list-style-type: none"> – Vernier calliper – Steel ruler <p>Training workshop and laboratory equipment incl.:</p>
<p>Implementation/ Execution/ Processing</p>	<p>Use hand- and power tools</p> <ul style="list-style-type: none"> • Use appropriate personal protective equipment (PPE) • Acquire the material and tools required to complete the task • Locate and hold in place material needed for hand- and power tool application • Measure and mark areas for hand and power tool application • Safely use hand or power tool to perform task • Safely store hand- and power tools when not in immediate use • Continuously inspect work progress and compliance with given measurements/ tolerances in accordance with technical drawings 	<p>Tool applications to produce mechanical installation part(s) must include:</p> <ul style="list-style-type: none"> • Cutting, drilling, threading, tapping, filing, joining <p>Range of work materials to be covered (minimum):</p> <ul style="list-style-type: none"> • Metal • PVC • Copper 			

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	and/or instructions				– Workbenches for practical exercises
Evaluation/ Documentation/ Housekeeping	<p>Evaluate the work result and conduct housekeeping activities</p> <ul style="list-style-type: none"> • Evaluate the correctness of completed task according to drawings and/or instructions • Report work progress to appropriate personnel • Clean the work area • Inspect and clean hand- and power tools • Store and secure work pieces, tools & materials • Complete applicable work documentation 				
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"> • Conducting risk assessment specific to the project • Using hand and power tools safely • Using appropriate PPE safely • Planning task accurately (tools, materials and time required) in accordance to drawings and/or instructions and identifying and reporting of unsafe or defective equipment in accordance to worksite procedures • Caring and storing of equipment in accordance with manufacturers recommendations and worksite procedures 					