

NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician			SAQA ID: 91761		
Learning Area 5: <b>Install wiring systems and accessories (low voltage) in domestic buildings and premises (incl. earthing and bonding)</b>			Total Hours:		128
Learning Project 4: <b>Install internal and external single phase lighting systems (incl. damp-proof, LED/Halogen lighting systems)</b>			Total Hours:		16
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		LA5 - LP3			
Learning project description: <b>Install internal and external single phase lighting fittings (incl. damp-proof, LED/Halogen lighting 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-05-PS01, PM-05-PS02, PM-05-PS04, PM-05-PS05, PM-05-PS06, PM-06-PS01-02 PM-07-PS01-03 PM-08-PS01-05	KM-05-KT01 KM-05-KT02 KM-05-KT03	WM-01-WE01-03 WM-02-WE01-03 WM-03-WE01-03		
Planning/ Preparation	<p><b><u>Provide access to (Given):</u></b> Work tasks/job requests and material and equipment as specified in last column;</p> <p><b><u>Apprentices must be able to do/perform the following (hard and soft) skills:</u></b></p> <p><b>Prepare installation of domestic lighting system</b></p> <ul style="list-style-type: none"><li>Obtain information about lighting system installation specifications</li><li>Analyse drawings</li><li>Determine and analyse characteristics of required</li></ul>	<p><b><u>Knowledge of:</u></b></p> <ul style="list-style-type: none"><li>General safety rules and procedures connected to lighting installations</li><li>Energy consumption of lighting systems</li><li>Dimensioning, type and characteristics of lighting installation components</li><li>Principles of light</li><li>Common lighting terms</li><li>Types and applications of luminaires</li><li>Operating principles and connection arrangements for lighting systems</li></ul>	<p><b><u>Under supervision:</u></b></p> <ul style="list-style-type: none"><li>Participate in talks with clients and briefings with superiors to determine lighting system specifications</li><li>Analyse schematic drawings and documentations for domestic lighting system installations</li><li>Develop work plans for domestic lighting systems starting from one room to the whole house</li><li>Introduce the range of</li></ul>	<ul style="list-style-type: none"><li>Self-study assignments</li><li>Using of internet sources, text books and work sheets</li><li>Instruction</li><li>Inspection of a construction site with assignments</li><li>Observation method</li></ul>	<p><b>Print materials, electronic files, software applications incl.:</b></p> <ul style="list-style-type: none"><li>OHS Act</li><li>SANS 10142-1</li><li>Text books</li><li>Manuals for trainers and apprentices incl. multimedia software</li><li>Set of presentation aids (videos, slides) for overhead or LED/LCD projectors</li></ul> <p><b>Access equipment</b></p>

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	<p>lighting systems</p> <ul style="list-style-type: none"> <li>• Inspect the area where lighting system will be installed</li> <li>• Select and determine lighting system components (incl. correct lamp type for the intended purpose)</li> <li>• Develop a work plan for the lighting system installation</li> <li>• Plan site facilities and the selection of the needed tools and equipment</li> <li>• Modify drawing if required</li> <li>• Compile list of needed parts</li> </ul>	<ul style="list-style-type: none"> <li>• Types of materials, tools and equipment used for lighting installations</li> <li>• Installation standards</li> <li>• Basic installation circuits</li> <li>• Types and forms of lighting installations</li> <li>• Installation zones and routes</li> <li>• Testing of the electrical installation (Visual inspection, continuity test)</li> </ul>	<p>installation materials needed for domestic lighting installations</p> <ul style="list-style-type: none"> <li>• Undertake all preparatory installation activities with assistance and regular supervision</li> <li>• Practice general safety rules and safe work procedures related to light systems</li> <li>• Perform lighting system installations in ceilings/walls/floors under direct and constant supervision until competent</li> <li>• Install lighting systems without assistance but regular supervision (2<sup>nd</sup> year)</li> <li>• Engage in regular housekeeping activities, tool and equipment maintenance</li> <li>• Provide work documentation, verbal and written reports as required by the company</li> </ul>		<p><b>incl.:</b></p> <ul style="list-style-type: none"> <li>• Ladders and scaffolds</li> </ul> <p><b>Hand- &amp; power tools and PPE incl.:</b></p> <ul style="list-style-type: none"> <li>• Electrical drilling machine</li> <li>• Standard electrician's toolbox</li> </ul> <p><b>Measuring and testing instruments incl.:</b></p> <ul style="list-style-type: none"> <li>• Measuring tape</li> <li>• Continuity tester</li> </ul> <p><b>Training workshop incl.:</b></p> <ul style="list-style-type: none"> <li>• Installation cabins/ cubicles</li> <li>• Various types and sizes of reusable lighting fixtures for ceiling/wall, indoor/outdoor, socket types and IP ratings</li> <li>• Various types of lighting control devices and switches</li> <li>• Various types of lamps including CF, fluorescent, incandescent, halogen LED</li> </ul>
<b>Implementation/ Execution</b>	<p><b>Carry out installation of domestic lighting system</b></p> <ul style="list-style-type: none"> <li>• Monitor and follow statutory requirements, sustainable energy and environmental principles and practices</li> <li>• Follow regulations for lifting and working in confined spaces</li> <li>• Use power tools/ equipment as per statutory requirements</li> <li>• Adhere to installation zones, routes and installation types</li> <li>• Install associated hardware, fittings and light control devices as per manufacturer's procedures</li> <li>• Undertake continuous quality checks of the work</li> </ul>				

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	in accordance with given instructions				
<b>Evaluation/ Documentation</b>	<b>Complete the installation work and conduct housekeeping activities</b> <ul style="list-style-type: none"> <li>• Conduct inspection and testing of lighting and associated hardware</li> <li>• Clean the workplace after installation work</li> <li>• Maintain tools and equipment</li> <li>• Report work progress to appropriate personnel</li> <li>• Hand over of the lighting installation</li> <li>• Complete documentation and compile an acceptance protocol</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>• Lighting systems selected and installed according to manufacturers specifications and complying with SANS-10142-1</li> <li>• Circuits correctly connected, mechanically tight and neatly loomed to protection and control devices</li> <li>• Relevant tools and equipment were used according to job specifications and statutory requirements</li> <li>• Worksite was left neat and tidy</li> </ul>					