

NOCC-A21 Electrician: Competence Package

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

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

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	in accordance with given instructions				
Evaluation/ Documentation	Complete the installation work and conduct housekeeping activities <ul style="list-style-type: none"> • Conduct inspection and testing of lighting and associated hardware • Clean the workplace after installation work • Maintain tools and equipment • Report work progress to appropriate personnel • Hand over of the lighting installation • Complete documentation and compile an acceptance protocol 				
Total	Hours: 16				
Specialisation additions					
Assessment guidance					
<p>Criteria for assessment:</p> <ul style="list-style-type: none"> • Lighting systems selected and installed according to manufacturers specifications and complying with SANS-10142-1 • Circuits correctly connected, mechanically tight and neatly loomed to protection and control devices • Relevant tools and equipment were used according to job specifications and statutory requirements • Worksite was left neat and tidy 					