

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 5: <b>Install internal and external single phase socket outlets (incl. damp-proof)</b>                                      |  |  | Total Hours:   | 8   |  |
| Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):   |  | LA 5 – LP4   |  |   |  |
| Learning project description: <b>Install internal and external single phase socket outlets (incl. damp-proof) (power off circuit)</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-06-PS01 PM-07-PS01-03 PM-08-PS01-03   | KM-05-KT01<br>KM-05-KT02<br>KM-05-KT03   | WM-01-WE01-03<br>WM-02-WE01-03<br>WM-03-WE01-03  |   |  |
| <b>Planning/ Preparation</b>   | <p><b>Provide access to (Given):</b><br/>Work tasks/job requests and material and equipment as specified in last column;</p> <p><b>Apprentices must be able to do/perform the following (hard and soft) skills:</b></p> <p><b>Prepare for the installation of single phase circuits for socket outlets</b></p> <ul style="list-style-type: none"> <li>Identify, obtain and understand statutory requirements for a given work area</li> <li>Identify and establish risk</li> </ul> | <p><b>Knowledge of:</b></p> <p>General safety rules and procedures pertaining to the installation of socket outlets</p> <ul style="list-style-type: none"> <li>Regulations pertaining to the installation of socket outlets. (SANS 10142-1)</li> <li>Overview of applicable protective measures (circuit breakers for socket outlets).</li> <li>Types and forms of socket outlet installations</li> <li>Installation zones and routes</li> <li>Testing of the electrical installation (Visual</li> </ul> | <p><b>Under supervision:</b></p> <ul style="list-style-type: none"> <li>Analyse simple and gradually more complex domestic socket outlet systems</li> <li>Develop work plans for domestic socket outlet installations starting from one room to the whole house</li> <li>Identify installation materials needed for domestic socket outlet installations</li> <li>Initially perform preparatory works under</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>Observation method</li> <li>Description and demonstration</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>control measures and procedures in preparation for the work</p> <ul style="list-style-type: none"> <li>• Prepare installation in consultation with others affected by the work</li> <li>• Determine the scope and location of the work to be undertaken from documentation</li> <li>• Identify and check material needed for the installation work against job requirements</li> <li>• Identify and check tools, equipment and measuring devices needed for the installation work</li> </ul>   | <p>inspection, continuity test,</p> <p><b>Circuits for socket outlets encompassing:</b></p> <ul style="list-style-type: none"> <li>• The purpose of socket outlets</li> <li>• Requirements concerning the polarity of switched socket outlets</li> <li>• Number of socket outlets connected to 20 A circuit breakers</li> <li>• Installation methods of a single phase socket outlet circuits</li> <li>• Testing (dead testing only) for correct compliance with SANS standards</li> </ul> | <p>direct and constant supervision of a qualified Electrician</p> <ul style="list-style-type: none"> <li>• Undertake all preparatory installation activities without assistance but regular supervision (2<sup>nd</sup> year)</li> <li>• Perform socket outlet installations in ceilings/walls/floors under direct and constant supervision until competent.</li> <li>• Install socket outlets without assistance but regular supervision</li> <li>• Engage in regular housekeeping activities, tool and equipment maintenance</li> </ul> |  | <p><b>incl.:</b></p> <ul style="list-style-type: none"> <li>• Ladders</li> </ul> <p><b>Hand- &amp; power tools incl.:</b></p> <ul style="list-style-type: none"> <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 and laboratory equipment incl.:</b></p> <ul style="list-style-type: none"> <li>• Installation cabins/ cubicles</li> <li>• Set of various standard types (single, double, switched etc.) of reusable single phase, flush and surface mount sockets for wall/floor indoor/ outdoor, socket types ] current and IP ratings</li> </ul> |
| <p><b>Implementation/ Execution</b></p> | <p><b>Install internal and external single phase socket outlets</b></p> <ul style="list-style-type: none"> <li>• Follow risk control measures and procedures for carrying out the work</li> <li>• Install socket outlets and accessories according to given installation conditions to comply with technical standards and job specifications</li> <li>• Install socket outlets in the required locations and within acceptable standards</li> <li>• Terminate wiring at socket outlets in accordance with manufacture's specifications</li> <li>• Carry out installation efficiently without unnecessary waste of</li> </ul> |  |   |  |  |

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|  | materials or damage to circuits, appliances, machines, the surrounding environment   |  |  |  |  |
| <b>Evaluation/ Documentation</b>   | <p><b>Complete installation work and conduct housekeeping activities</b></p> <ul style="list-style-type: none"> <li>• Complete work and notify appropriate personnel</li> <li>• Conduct housekeeping activities</li> <li>• Maintain and store tools and equipment in accordance with site/ company procedures</li> <li>• Finalise work completion documentation</li> </ul> |  |  |  |  |
| <b>Total</b>   | Hours: 8   |  |  |  |  |
| <b>Specialisation additions</b>  |  |  |  |  |  |
| <b>Assessment guidance</b>   |  |  |  |  |  |
| <p><b>Criteria for assessment:</b></p> <ul style="list-style-type: none"> <li>• Socket outlets 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> |  |  |  |  |  |