

NOCC-A21 Electrician: Competence Package

Relevant Occupation /trade title: Electrician			SAQA ID: 91761		
Learning Area 4: Read, interpret and revise engineering, schematics drawings and documentation			Total Hours:		40
Learning Project 2: Identify, read and interpret architectural and building drawings and specifications			Total Hours:		8
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):			<ul style="list-style-type: none"> LA1 (LP 10) 		
Learning project description: Reading and interpreting elementary architectural and building drawings and specifications as per SAQA 10105/14					
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-None	KM-None	WM-None		
Planning/Preparation	<p>Provide access to (Given): Drawings, schematic diagrams and equipment as per last column</p> <p>Apprentices must be able to do/perform the following (hard and soft) skills:</p> <p>Prepare to use architectural and building drawings (including electrical plans)and specifications</p> <ul style="list-style-type: none"> Determine the scope of work from drawings and specifications in the nature of the work to be undertaken. Follow established routines to obtain drawings and specifications required for the work to be undertaken Determine job requirements from work instructions 	<p>Knowledge of:</p> <p>Architectural (including but not limited to electrical plans) drawings encompassing:</p> <ul style="list-style-type: none"> Site plans, floor plans detailed drawings and standard drawings Architectural floor plan to determine the power and lighting or communications / building automation layouts Site plan to locate the service point, consumer's mains, communication services, main 	<p>Under supervision: <i>If the workplace allows for this exposure:</i></p> <ul style="list-style-type: none"> Access, select and view drawings Extract and use information from drawings to define scope of work Discuss appropriateness/ correctness drawing specifications with supervisor Issue latest amendments of drawings to the 	<ul style="list-style-type: none"> Instructions/Lectures Internet research Site visits Observation method with checklist. Case studies Role play (communication with clients/staff) 	<p>Print materials, electronic files, software applications incl.:</p> <ul style="list-style-type: none"> SANS Drawing Standards Software to view architectural and building drawings Architectural and building drawings required as per work specifications Text books Training manuals for trainers and apprentices incl. multimedia

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	<ul style="list-style-type: none"> • Interpret and read job specifications • Select drawings and specifications relevant to information required • Identify equipment/ systems/ components/ appliances to be installed • Identify and check correct equipment for viewing and processing of drawings and specifications 	<p>switchboard, distribution boards.</p> <ul style="list-style-type: none"> • Standard drawing scales to determine the actual lengths represented by dimensions on an architectural drawing • Reading and interpretation of floor plans to determine the location of the electrical/ communication/automation accessories and appliances • ISO standard symbols used on floor plans to show the location of the accessories and appliances as detailed in an electrical schedule 	<p>relevant people</p> <ul style="list-style-type: none"> • Identify construction material types (solid/wooden/ underfloor, etc) • Apply information from construction drawings in installation activities • Safeguard and store drawings 		<p>software</p> <ul style="list-style-type: none"> • Set of presentation aids (videos, slides) for overhead or LED/LCD projectors
<p>Implementation/ Execution</p>	<p>Interpret and use architectural (Electrical plans) and construction drawings, diagrams, manuals and schedules to obtain job information</p> <ul style="list-style-type: none"> • Select drawings, diagrams, specifications and schedules appropriate to the work being undertaken • Interpret drawings, diagrams, specifications and schedules using knowledge of drawing layouts, drawing standards and symbols • Extract dimensions from drawings and diagrams for application to work undertaken • Determine location of equipment from equipment schedules and location diagrams • Review specifications to ascertain their format and where information relevant to the work to be undertaken is located • Interpret information given in specifications in relation to the work to be conducted 	<p>Building construction drawings and diagrams encompassing:</p> <ul style="list-style-type: none"> • Building types (timber frame, brick veneer, double brick and metal frame) • Identification of different types of footings, floors, external walls, roofs, interior walls • Typical wire ways through buildings, structures and premises • Sequence of each constructional stage for brick, brick veneer and timber structures 			<p>Stationary machinery, incl.:</p> <ul style="list-style-type: none"> • Computer system • Printer, plotter • Scanner • Photocopy machine • Tracing light box • Flat file cabinet for blueprints/drawings <p>Measuring and testing instruments incl.:</p> <ul style="list-style-type: none"> • Steel measuring tape • Acrylic Rulers • Geometry set squares • Reduction scale rulers (Architect's scale)
<p>Evaluation/ Documentation</p>	<ul style="list-style-type: none"> • Complete work and notify appropriate personnel 				

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	<ul style="list-style-type: none"> Conduct housekeeping activities Clean and check drawing tools, and equipment Store drawing tools and equipment in designated locations Return to storage or dispose of any surplus resources and materials Process and finalise works completion records, reports, and/or documentation and information Brief appropriate personnel about the completion of work 	<ul style="list-style-type: none"> Identification of the stages at which the electrical/communications installation takes place in the construction sequence Areas of cooperation between electrical/communications and other building trades 			
Total	Hours: 8				
Specialisation additions					
Assessment guidance					
<p>Criteria for assessment:</p> <ul style="list-style-type: none"> Reading and interpreting electrical wiring diagrams/ schematic drawings to required specifications Understanding of symbols and standards and their application Communicating by using electrical wiring diagrams/ schematic drawings. Compiling material lists 					