

Logo

Name of Institution

# **BUILDING ELECTRICAL INSTALLATION Level II**

# Teacher's Guide

**TTLM Code: CON BEI2 TTLM 05 19V1**

Sample only

## Introduction

This Teacher's Guide is developed to assist you in delivering the **Masonry Level II** training program. It is usually designed as a resource to support the learning activity.

The Building Electrical Installation Level II Training is developed to equip the trainees with the required competences in Apply Continuous Improvement Processes (Kaizen), Participate in Workplace Communication, Work in Team Environment, Develop Business Practice, Install electrical apparatus, Install and Terminate Wiring System, Install Electrical Circuit Protection, Connect Wiring Systems and Equipment and Install wiring system using rigid steel metallic conduit. The Program consists of nine (09) learning modules covering the nine (09) units of competence.

This teacher's guide covers all the nine (09) learning modules and it will assist you in delivering the said program and achieving its learning objectives and outcomes. It also provides information in the organization of the learning guides and assessment packets. The learning guides are aid to the trainees by telling them what need to do, when and how to do it and the expectations once the learning activities are completed. While the assessment packet guide you in developing the tools or instruments to measure trainee's overall achievement of the stated competence. Thus it is important for you to understand the design of this program and the mechanics in which it shall be delivered.

Your role as the teacher is to provide opportunities aimed at helping the trainees develop and improve their competences. You are expected to guide and assist them as they go through the learning activities and actual work.

## Matrix of competence

<b>Unit of Competence</b>	<b>Learning Modules and Code</b>
CON BEI2 09 1012 Apply Continuous Improvement Processes (Kaizen)	CON BEI2 01 05 19 Applying Continuous Improvement Processes (Kaizen)
CON BEI2 07 02 11 Participate in Workplace Communication	CON BEI2 02 05 19 Participating in Workplace Communication
CON BEI2 07 02 11 Work in Team Environment	CON BEI2 03 05 19 Working in Team Environment
CON BEI2 07 02 11 Develop Business Practice	CON BEI2 04 05 19 Developing Business Practice
CON BEI2 07 02 11 Install Electrical Apparatus	CON BEI2 05 05 19 Installing Electrical Apparatus
CON BEI2 07 02 11 Install and Terminate Wiring System	CON BEI2 06 05 19 Installing and Terminate Wiring System
CON BEI2 07 02 11 Install Electrical	CON BEI2 07 05 19

	Circuit Protection	Installing Electrical Circuit Protection
CON BEI2 07 0211	Connect Wiring Systems and Equipment	CON BEI2 08 05 19 Connecting Wiring Systems and Equipment
CON BEI2 07 0211	Install wiring system using rigid steel and metallic conduit	CON BEI2 09 05 19 Installing wiring system using rigid steel and metallic conduit

### Learning Outcomes and Assessment Criteria

<b>Unit of Competence</b>	Apply Continuous Improvement Processes (Kaizen)
<b>Module Title</b>	CON BEI2 01 05 19 Applying Continuous Improvement Processes (Kaizen)
<b>LO 1</b>	Satisfy quality system requirements in daily work
Assessment Criteria	<ul style="list-style-type: none"> <li>• Access information on quality system requirements for own job function</li> <li>• Record and report quality control data in accordance with quality system</li> <li>• Follow <b>quality control procedures</b> to ensure products, or data, are of a defined quality as an aid to acceptance or rejection</li> <li>• Recognize and report non-conformances or problems</li> <li>• Conduct work in accordance with <b>sustainable energy work practices</b></li> <li>• Promote sustainable energy principles and work practices to other workers.</li> </ul>
<b>LO 2</b>	Analyze opportunities for corrective and/or optimization action
Assessment Criteria	<ul style="list-style-type: none"> <li>• Compare current work practices, procedures and process or equipment performance with requirements and/or historical data or records</li> <li>• Recognize variances that indicate abnormal or sub-optimal performance</li> <li>• Collect and/or evaluate batch and/or historical records to determine possible causes for sub-optimal performance</li> <li>• Use appropriate quality improvement techniques to rank the probabilities of possible causes</li> </ul>
<b>LO 3</b>	Recommend corrective and/or optimization action
Assessment Criteria	<ul style="list-style-type: none"> <li>• Analyze causes to predict likely impacts of changes</li> </ul>

	<ul style="list-style-type: none"> <li>and decide on the appropriate actions</li> <li>• Identify required changes to standards and procedures and training</li> <li>• <b>Report</b> recommendations to designated personnel</li> </ul>
<b>LO 4</b>	Participate in the implementation of recommended actions
Assessment Criteria	<ul style="list-style-type: none"> <li>• Implement approved actions and monitor performance following changes to evaluate results</li> <li>• Implement changes to systems and procedures to eliminate possible causes</li> <li>• Document outcomes of actions and communicate them to <b>relevant personnel</b>.</li> </ul>
<b>LO 5</b>	Participate in the development of continuous improvement strategies
Assessment Criteria	<ul style="list-style-type: none"> <li>• Review all relevant features of work practice to identify possible contributing factors leading to sub-optimal performance</li> <li>• Identify options for removing or controlling the risk of sub-optimal performance</li> <li>• Assess the adequacy of current controls, quality methods and systems</li> <li>• Identify opportunities to continuously improve performance</li> <li>• Develop recommendations for continual improvements of work practices, methods, procedures and equipment effectiveness</li> <li>• Consult with appropriate personnel to refine recommendations before implementation of approved improvement strategies</li> <li>• Document outcomes of strategies and communicate them to relevant personnel</li> </ul>

<b>Unit of Competence</b>	<b>Participate in workplace Communication</b>
<b>Module Title</b>	<b>CON BE12 M02 05 19 Participating in workplace Communication</b>
<b>LO 1</b>	Obtain and convey workplace information
Assessment Criteria	<ul style="list-style-type: none"> <li>• Specific and relevant information is accessed from appropriate sources</li> <li>• Effective questioning , active listening and speaking skills are used to gather and convey information</li> <li>• Appropriate medium is used to transfer information and ideas</li> <li>• Appropriate non- verbal communication is used</li> <li>• Appropriate lines of communication with supervisors and colleagues</li> </ul>

	<p>are identified and followed</p> <ul style="list-style-type: none"> <li>• Defined workplace procedures for the location and storage of information are used</li> <li>• Personal interaction is carried out clearly and concisely</li> </ul>
<b>LO 2</b>	Participate in workplace meetings and discussions
Assessment Criteria	<ul style="list-style-type: none"> <li>• Team meetings are attended on time</li> <li>• Own opinions are clearly expressed and those of others are listened to without interruption</li> <li>• Meeting inputs are consistent with the meeting purpose and established protocols</li> <li>• Workplace interactions are conducted in a courteous manner</li> <li>• Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to</li> <li>• Meetings outcomes are interpreted and implemented</li> </ul>
<b>LO 3</b>	Complete relevant work related documents
Assessment Criteria	<ul style="list-style-type: none"> <li>• Range of forms relating to conditions of employment are completed accurately and legibly</li> <li>• Workplace data is recorded on standard workplace forms and documents</li> <li>• Basic mathematical processes are used for routine calculations</li> <li>• Errors in recording information on forms/ documents are identified and properly acted upon</li> <li>• Reporting requirements to supervisor are completed according to organizational guidelines</li> </ul>

<b>Unit of Competence</b>	<b>: Work In Team Environment</b>
Module Title	<b>: CON BEI2 M03 05 19 Working In Team Environment</b>
<b>LO 1</b>	<b>Describe team role</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• The role and objective of the team is identified from available sources of information</li> <li>• Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources</li> </ul>

<b>LO 2</b>	<b>Identify own role and responsibility within team</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• Individual role and responsibilities within the team environment are identified</li> <li>• Roles and responsibility of other team members are identified and recognized</li> <li>• Reporting relationships within team and external to team are identified</li> </ul>
<b>LO 3</b>	<b>Work as a team member</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives</li> <li>• Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and workplace context</li> <li>• Observed protocols in reporting using standard operating procedures</li> <li>• Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members</li> </ul>

<b>Unit of Competence</b>	<b>Develop Business Practice</b>
Module Title	: CON BEI2 M04 05 19 <b>Developing Business Practice</b>
<b>LO 1</b>	<b>Identify business opportunity</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• <b>Business opportunities</b> are investigated and identified</li> <li>• Feasibility study is undertaken to determine likely <b>business viability</b></li> <li>• Market research on product or service is undertaken</li> <li>• Assistance with feasibility study of <b>specialist and relevant parties</b> is sought as required</li> <li>• Impact of emerging or changing technology including e-commerce, on business operations are evaluated</li> <li>• Practicability of business opportunity assessed in line with perceived risks, returns sought and resources available</li> <li>• Business plan for operation is completed</li> </ul>

LO 2	<b>Identify personal business skills</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• Financial and business skills available are identified and taken into account when business opportunities are researched</li> <li>• <b>Personal skills/attributes</b> are assessed and matched against those perceived as necessary for a particular business opportunity</li> <li>• Business risks are identified and assessed according to resources available and personal preferences</li> </ul>
LO 3	<b>Plan for establishment of business operation</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• Business structure and operations are determined and documented</li> <li>• Procedures to guide operations are developed and documented</li> <li>• Financial backing for business operation is secured</li> <li>• Business legal and regulatory requirements are identified and complied</li> <li>• <b>Human and physical resources</b> required to commence business operation are determined</li> <li>• Recruitment strategies are developed and implemented</li> </ul>
LO4	<b>Implement establishment plan</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• Marketing of business operation is undertaken</li> <li>• Physical and human resources to implement business operation are obtained</li> <li>• <b>Operational unit</b> to support and coordinate business operation is established</li> <li>• Monitoring process for managing operation is developed and implemented</li> <li>• <b>Legal documents</b> are carefully maintained and relevant <b>records</b> are kept and updated to ensure validity and accessibility</li> <li>• Contractual procurement rights for goods and services including <b>contracts with relevant people</b>, negotiated and secured as required in accordance with the business plan</li> <li>• Options for leasing/ownership of business premises identified and contractual arrangements completed in accordance with the business plan</li> </ul>
LO5	<b>Review implementation process</b>

Assessment Criteria	<ul style="list-style-type: none"> <li>• Review process for implementation of business operation is developed and implemented</li> <li>• Improvements in business operation and associated management process are identified</li> <li>• Identified improvements are implemented and monitored for effectiveness</li> </ul>
Unit of Competence	<b>Install Electrical Apparatus</b>
Module Title	<b>CON BEI2 M05 05 19 Installing Electrical Apparatus</b>
LO 1	<b>Plan and prepare installation activities</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• Installation is planned and prepared to ensure OH&amp;S policies and procedures are followed</li> <li>• The work is appropriately sequenced in accordance with requirements</li> <li>• Appropriate personnel are consulted to ensure the work is coordinated effectively with others involved on the work site</li> <li>• Apparatus is checked against job requirements</li> <li>• Apparatus is obtained in accordance with established procedures and to comply with requirements</li> <li>• Location in which apparatus is to be installed is determined from job requirements</li> <li>• Materials necessary to complete the work are obtained in accordance with established procedures and checked against job requirements</li> <li>• Tools, equipment and testing devices needed to carry out the installation work are obtained in accordance with established procedures and checked for correct operation</li> <li>• Safety preparatory work is checked to ensure no unnecessary damage has occurred and complies with requirements</li> </ul>
LO 2	<b>Install electrical apparatus</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• OH&amp;S policies and procedures for installing electrical apparatus are followed</li> <li>• Apparatus are installed in accordance with requirements, without damage or distortion to the surrounding environment or services</li> <li>• Variation to apparatus installation is carried out in accordance to customer/client requirements</li> <li>• Apparatus are terminated and connected in accordance with requirements</li> <li>• Unplanned events or conditions are responded to in accordance with established procedures</li> </ul>



	<ul style="list-style-type: none"> <li>Approval is obtained in accordance with established procedures from appropriate personnel before any contingencies are implemented. On-going checks of the quality of the work are undertaken in accordance with established procedures.</li> <li>Install electrical apparatus with several wire (green/yellow) for protection earth on Metal body</li> </ul>
LO 3	<b>Inspect and notify completion of work</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>Final inspections are undertaken to ensure the installed apparatus conforms to requirements</li> <li>Work completion is notified in accordance with established procedures.</li> </ul>
LO4	<b>Clean up</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>Work area is cleared and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification</li> <li>Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices</li> </ul>
Unit of Competence	<b>Install and Terminate Wiring System</b>
Module Title	<b>CON BE12 M06 05 19 : Installing and Terminating Wiring System</b>
LO 1	<b>Plan and Prepare</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>Installation is planned and prepared to ensure OH&amp;S policies and procedures are followed, the work is appropriately sequenced in accordance with requirements</li> <li>Appropriate personnel are consulted to ensure the work is coordinated effectively with others involved on the work site</li> <li>Wiring systems' components are checked against job requirements</li> <li>Fitting Accessories are obtained in accordance with established procedures and to comply with requirements</li> <li>Location in which specific items of accessories, apparatus and circuits are to be installed is determined from job requirements</li> <li>Materials necessary to complete the work are obtained</li> </ul>

	<p>in accordance with established procedures and checked against job requirement</p> <ul style="list-style-type: none"> <li>• Tools, equipment and testing devices needed to carry out the installation work are obtained in accordance with established procedures and checked for correct operation and safety</li> <li>• Preparatory work is checked to ensure no unnecessary damage has occurred and complies with requirements</li> </ul>
LO 2	<b>Perform installation and termination of wiring system</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• OHS policies and procedures for installing electrical wiring systems are followed</li> <li>• Wiring systems are installed in accordance with requirements, without damage or distortion to the surrounding environment or services</li> <li>• Accessories are terminated and connected in accordance with requirements</li> <li>• Unplanned events or conditions are responded to in accordance with established procedures</li> <li>• Approval is obtained in accordance with established procedures from appropriate personnel before any contingencies are implemented</li> </ul>
LO 3	<b>Inspect &amp; notify completion of work</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• Final inspections are undertaken to ensure the installed apparatus conforms to requirements</li> <li>• Work completion is notified in accordance with established procedures.</li> </ul>
LO4	<b>Clean up</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• Work area is cleared and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification</li> <li>• Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices.</li> </ul>

## Learning Outcomes and Assessment Criteria

<b>Unit of Competence</b>	<b>Install Electrical Circuit Protection</b>
<b>Module Title</b>	<b>CON BEI2 MO7 05 19 Installing Electrical Circuit Protection</b>
<b>LO 1</b>	Plan and Prepare for fault findings
Assessment Criteria	<ul style="list-style-type: none"> <li>• Instructions for the preparation of the work activity are communicated and confirmed to ensure clear understanding</li> <li>• Tools, equipment and PPE needed to install electrical wiring are identified, checked to ensure they work correctly as intended and are safe to use in accordance with established procedures</li> <li>• Materials needed for work are obtained in accordance with established procedures</li> </ul>
<b>LO 2</b>	Install electrical protection system
Assessment Criteria	<ul style="list-style-type: none"> <li>• Safety procedures are followed throughout the process of installation</li> <li>• Correct procedures for installation of electrical protection system are performed in line with job requirements and PEC</li> <li>• Schedule of work is followed to ensure work is completed in an agreed time, to a quality standard and with a minimum waste</li> <li>• Further instructions are sought from a supervisor if unplanned events or conditions occur</li> <li>• On-going checks of quality of work are done in accordance with instructions and requirements</li> </ul>
<b>LO 3</b>	Notify completion of work
Assessment Criteria	<ul style="list-style-type: none"> <li>• Final checks are made to ensure the work conforms with instructions and requirements</li> <li>• Supervisor is notified upon completion of work</li> <li>• Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures</li> <li>• Work area is cleaned and made ready for next task</li> </ul>
<b>LO 4</b>	Clean up
Assessment Criteria	<ul style="list-style-type: none"> <li>• Work area is cleared and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification</li> <li>• Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices</li> </ul>

## Learning Outcomes and Assessment Criteria

<b>Unit of Competence</b>	<b>Connect Wiring System &amp; Equipment</b>
<b>Module Title</b>	<b>CON BE12 MO8 05 19 Connecting Wiring System &amp; Equipment</b>
<b>LO 1</b>	<b>Plan and Prepare</b>
Assessment Criteria	<ul style="list-style-type: none"><li>• Work within a safe system of work and that you identify any foreseeable hazards relating to the connection of wiring systems, wiring enclosures and equipment</li><li>• Identify accurately the means of electrical isolation prior to connection when required</li><li>• Carry out isolation procedures to ensure a safe connection in accordance with electrical regulations and approved procedures</li></ul>
<b>LO 2</b>	<b>Connect Wiring System &amp; Equipment</b>
Assessment Criteria	<ul style="list-style-type: none"><li>• Make connections in accordance with specifications and comply with IEE wiring regulations as specified in the most recent Standard for Electrical Installations</li><li>• Check the connections are electrically and mechanically sound, and ensure that they are identified correctly and clearly</li><li>• Where appropriate, take safe and sensible action to remedy any identified defects after connection has taken place</li></ul>
<b>LO 3</b>	<b>Inspect and notify completion of work</b>
Assessment Criteria	<ul style="list-style-type: none"><li>• Final checks are made to ensure the work conforms with instructions and requirements</li><li>• Supervisor is notified upon completion of work</li><li>• Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures</li></ul>

## Learning Outcomes and Assessment Criteria

<b>Unit of Competence</b>	<b>Install Wiring System Using Rigid Steel Metallic Conduit</b>
<b>Module Title</b>	<b>CON BEI2 MO9 05 19 Installing Wiring System Using Rigid Steel Metallic Conduit</b>
<b>LO 1</b>	<b>Plan and Prepare</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• The existing electrical supply is confirmed in accordance with laid down procedure</li> <li>• Agreed procedures are followed to ensure the co-ordination of site services and the activities of other trades</li> <li>• The means of electrical isolation is identified accurately prior to commencing installation when required s</li> <li>• Isolation procedures are carried out to ensure a safe installation in accordance with electrical regulations and approved procedures</li> <li>• All locations are measured and marked out for wiring systems, wiring enclosures and equipment in accordance with electrical regulations and to meet an agreed specification</li> <li>• The planned locations are checked for their sensitivity, visually acceptable and are in accordance with other site services</li> </ul>
<b>LO 2</b>	<b>Install Wiring System</b>
Assessment Criteria	<ul style="list-style-type: none"> <li>• The wiring systems, wiring enclosures and equipment fixed safely and in accordance with relevant regulations and manufacturers' instructions</li> <li>• Test data is recorded in the format required by the job specifications and quality assurance procedures</li> </ul>
<b>LO 3</b>	<b>Inspect and notify completion of work</b>
Assessment Criteria	

**Training Mechanics** (The statements written below explain the delivery system of the program. They are samples only. You can make your own design delivery but it must be approved by the institution management)

The Outcome-Based Training is one form of an independent learning approach. This approach enables trainees to be master of their own environment and in charge of their learning. It is also characterized by the integration of theory and application as two dimensions of an effective learning process. In this program, the competence-based system is consists of a combination of **lecture-discussion, individualized learning activities, mentoring, field immersion and feedback.**

In this program the trainees will be given individual learning guide to go through and accomplish. They will be instructed through this learning guide to accomplish learning activities as part of the mechanism for transfer of learning from the training situation to the job situation. For each competence area, trainees will formulate a specific learning plan as a guide for applying their learning to work setting and for their own continuing self-development. At this point, your role as the teacher/facilitator is to guide the trainee in preparing and accomplishing their plan.

**Lecture and discussion** of the topics outlined in the session plan should be performed first before the trainees are instructed to go to the workshop. **You are also required to demonstrate the correct steps/procedures and techniques** to your trainees before you let them practice. Insure that they are practicing safely.

Most part of the training activities will be conducted in the workshop for better development of specific skills. Aside from motivating them to relate concepts and skills to their own work situations, make sure to provide the necessary opportunity for competence practice and better internalization of such concepts and techniques. The trainees should also be provided the opportunity to blend with the actual working unit in the industry.

In this system, it is important to develop a sustained relationship with the trainees through a continued involvement, where you are to offer **support, guidance and assistance** as the trainee go through the learning activities and actual work.

**With the mentoring approach**, the trainees are grouped in learning teams with one facilitator-mentor per team. Before learning session or workshop start in the morning, each team and mentor meets to give feedback regarding their work, or how the group improves, acquire set of skills for the members to become more effective trainees. You are also to asses them at the end of each module. However, they have to be ready before the assessment and it should be them to request for it.

Before the training start you should conduct an orientation session to brief the trainees on how the training will proceed.

## Session Plans (Statements written in black ink are part of the format)

### Session Plan-1 (M01-LO1)

Unit of Competence	<b>Apply Continuous Improvement Processes (Kaizen)</b>
Module Title	<b>Applying Continuous Improvement Processes (Kaizen)</b>
LO 1	Satisfy quality system requirements in daily work
Session Objectives:	At the end of this session the trainees shall be able to –

- Access information on quality system requirements for own job function
- Record and report quality control data in accordance with quality system
- Follow quality control procedures to ensure products, or data, are of a defined quality as an aid to acceptance or rejection
- Recognize and report non-conformances or problems
- Conduct work in accordance with sustainable energy work practices
- Promote sustainable energy principles and work practices to other workers

Activities	Nominal Duration	Contents	Methods
Sessions	10 mins	Introduction to the Module	Orientation
	100 mins	quality system information	Lecture-discussion
	170 mins	quality control data	Lecture-discussion
	60 mins	Steps of quality control procedures	Lecture-discussion
	40 mins	sustainable energy work practices	Lecture-discussion
Evaluation	90mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #1</li> <li>• Safety Manual and Guide</li> </ul>		

### Session Plan-2 (M01-LO2)

Unit of Competence	<b>Apply Continuous Improvement Processes (Kaizen)</b>
Module Title	<b>Applying Continuous Improvement Processes (Kaizen)</b>
LO 2	Analyze opportunities for corrective and/or optimization action
Session Objectives:	At the end of this session the trainees shall be able to –

- Compare current work practices, procedures and process or equipment performance with requirements and/or historical data or records
- Recognize variances that indicate abnormal or sub-optimal performance
- Collect and/or evaluate batch and/or historical records to determine possible causes for sub-optimal performance
- Use appropriate quality improvement techniques to rank the probabilities of possible causes

Activities	Nominal Duration	Contents	Methods
Sessions	10 mins	Recapitulation	Discussion
	60 mins	work practices, procedures and process	Lecture-discussion
	80min	Problem identification	Lecture-discussion demonstration
	210 mins	Root cause analysis	Lecture-discussion
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Question and Answer
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #2</li> </ul>		

### Session Plan-3 (M01-LO3)

Unit of Competence	<b>Apply Continuous Improvement Processes (Kaizen)</b>
Module Title	<b>Applying Continuous Improvement Processes (Kaizen)</b>
LO 3	Recommend corrective and/or optimization actions
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Analyze causes to predict likely impacts of changes and decide on the appropriate actions</li> <li>• Identify required changes to standards and procedures and training</li> <li>• <b>Report</b> recommendations to designated personnel</li> </ul>



Activities	Nominal Duration	Contents	Methods
Sessions	10 mins	Recapitulation	Question & Answer
	120 mins	Corrective action	Lecture-discussion
	120 mins	standards and procedures	Lecture-discussion
	30 mins	Report writing	Lecture-discussion
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity
Summary	20 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #3</li> </ul>		

#### Session Plan-4 (M01-LO4)

Unit of Competence	<b>Apply Continuous Improvement Processes (Kaizen)</b>
Module Title	<b>Applying Continuous Improvement Processes (Kaizen)</b>
LO4	Participate in the implementation of recommended actions
Session Objectives	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>Implement approved actions and monitor performance following changes to evaluate results</li> <li>Implement changes to systems and procedures to eliminate possible causes</li> <li>Document outcomes of actions and communicate them to <b>relevant personnel</b></li> </ul>

Activities	Nominal Duration	Contents	Methods
Sessions	20 mins	Recapitulation	Discussion
	120 mins	Preventive action	Lecture-discussion
	70 mins	relevant personnel	Lecture-discussion
	90min	Documentation	

Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Question & Answer
Resources	<ul style="list-style-type: none"> <li>Learning Guide #4</li> </ul>		

### Session Plan-5 (M01-LO5)

Unit of Competence	<b>Apply Continuous Improvement Processes (Kaizen)</b>
Module Title	<b>Applying Continuous Improvement Processes (Kaizen)</b>
LO5	Participate in the development of continuous improvement strategies
Session Objectives	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>Review all relevant features of work practice to identify possible contributing factors leading to sub-optimal performance</li> <li>Identify options for removing or controlling the risk of sub-optimal performance</li> <li>Assess the adequacy of current controls, quality methods and systems</li> <li>Identify opportunities to continuously improve performance</li> <li>Develop recommendations for continual improvements of work practices, methods, procedures and equipment effectiveness</li> <li>Consult with appropriate personnel to refine recommendations before implementation of approved improvement strategies</li> <li>Document outcomes of strategies and communicate them to relevant personnel</li> </ul>

Activities	Nominal Duration	Contents	Methods
Sessions	10 mins	Recapitulation	Discussion
	40 mins	possible contributing factors to sub-optimal performance	Lecture-discussion
	120 mins	Risk of sub-optimal performance	Lecture-discussion
	30 mins	Consultation and communication to relevant person	Lecture-discussion
	190mins	continual improvement	Lecture-discussion

Evaluation	80 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Question & Answer
Resources	<ul style="list-style-type: none"> <li>Learning Guide #5</li> </ul>		

**END**

### Session Plan-6 (M02 -LO1)

Unit of Competence	<b>Participate in workplace Communication</b>
Module Title	<b>Participating in workplace Communication</b>
LO 1	Obtain and convey workplace information
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>Access specific and relevant information from appropriate sources</li> <li>Use effective questioning , active listening and speaking skills to gather and convey information</li> <li>Use appropriate medium to transfer information and ideas</li> <li>Use appropriate non- verbal communication</li> <li>Identify and follow appropriate lines of communication with supervisors and colleagues</li> <li>Define workplace procedures for the location and storage of information</li> <li>Carry out personal interaction is clearly and concisely</li> </ul>

Activities	Nominal Duration	Contents	Methods
Sessions	10 mins	Introduction to the Module	Orientation
	120 mins	relevant information	Lecture-discussion
	150 mins	Effective communication	Lecture-discussion
	90 mins	Medium of communication	Lecture-discussion
	120mins	NON-verbal communication	Lecture-discussion
	100min	Lines of communication	Lecture-discussion
	120min	Modes of communication	Lecture-discussion
	30m	personal interaction	

Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #1</li> <li>• Safety Manual and Guide</li> </ul>		

### Session Plan-7 (M02-LO2)

Unit of Competence	<b>Participate in workplace Communication</b>
Module Title	<b>Participating in workplace Communication</b>
LO 2	Participate in workplace meetings and discussions
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Attend team meetings on time</li> <li>• Express own opinions clearly and those of others are listened to without interruption</li> <li>• Establish protocols of meeting p</li> <li>• conduct Workplace interactions in a courteous manner</li> <li>• Ask and respond Questions about simple routine workplace procedures</li> <li>• Interpret and implement meetings outcomes</li> </ul>

<b>Activities</b>	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	20 mins	Recapitulation	Discussion
	180 mins	Team meetings	Lecture-discussion demonstration
	90mins	Talking and listening/hearing	Lecture-discussion
	90 mins	Meeting protocols	Lecture-discussion
	125min	Work place interaction	Lecture-discussion
	85min	Minutes of meetings	Lecture-discussion
	60min	Meeting outcomes	Lecture-discussion
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity

Summary	20 mins	Wrap-up and Feedback	Question and Answer
Resources	<ul style="list-style-type: none"> <li>Learning Guide #2</li> </ul>		

### Session Plan-8 (M02-LO3)

Unit of Competence	<b>Participate in workplace Communication</b>
Module Title	<b>Participating in workplace Communication</b>
LO 3	Complete relevant work related documents
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>Complete range of forms relating to conditions of employment accurately and legibly</li> <li>Record workplace data on standard workplace forms and documents</li> <li>Use basic mathematical processes for routine calculations</li> <li>Identify errors in recording information on forms/ documents and properly acted upon</li> <li>Report requirements to supervisor according to organizational guidelines</li> </ul>

Activities	Nominal Duration	Contents	Methods
Sessions	20 mins	Recapitulation	Question & Answer
	240 mins	Purpose of formats & documents	Lecture-discussion
	210 mins	Basic mathematical operation	Lecture-discussion
	174min	Errors in recording information	Lecture-discussion
Evaluation	130 mins	Accomplishment of LAP Test	Individual Activity
Summary	25 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #3</li> </ul>		

### Session Plan-9 (M03-LO1)

Unit of Competence	<b>Work In Team Environment</b>		
Module Title	<b>Working In Team Environment</b>		
LO6	Describe team role and scope		
Session Objectives	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> <li>• Identify the role and objective of the team from available sources of information</li> <li>• Identify team parameters, reporting relationships and responsibilities from team discussions and appropriate external sources</li> </ul>		
<b>Activities</b>	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Module introduction	Orientation
	150 mins	role and objective of the team	Lecture-discussion
	180 mins	sources of information	Lecture-discussion and Demonstration
	130 mins	Team parameters	Lecture-discussion and Demonstration
Evaluation	120 mins	Accomplishment of LAP Test	Individual Activity
Summary	20 mins	Wrap-up and Feedback	Question & Answer
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #6</li> </ul>		

### Session Plan-10 (M03-LO2)

Unit of Competence	<b>Work In Team Environment</b>		
Module Title	<b>Working In Team Environment</b>		
LO2	<b>Identify own role and responsibility within team</b>		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> <li>• Identify Individual role and responsibilities within the tea environment</li> <li>• Identify and recognize roles and responsibility of other team members</li> <li>• Identify reporting relationships within team and external to team</li> </ul>		

<b>Activities</b>	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Discussion
	180 mins	Individual role and responsibilities within the team	Lecture-discussion
	170mins	Roles and responsibility of other team members	Lecture-discussion
	150 mins	Team to team relation	Lecture-discussion
Evaluation	80 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Question & Answer
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #7</li> </ul>		

### **Session Plan-11 (M03-LO3)**

Unit of Competence	<b>Work In Team Environment</b>
Module Title	<b>Working In Team Environment</b>
LO3	<b>Work as a team member</b>
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Use effective and appropriate forms of communications and interactions with team members who contribute to known team activities and objectives</li> <li>• Apply effective and appropriate contributions to complement team activities and objectives, based on individual skills and competencies and workplace context</li> <li>• Observe protocols in reporting using standard operating procedures</li> <li>• Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members</li> </ul>

<b>pActivities</b>	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	20min	Recapitulation	Question & answer
	180min	Contribution of team member	Lecture- discussion
	150min	Use of effective forms communication	Lecture- discussion
	80min	Individual competency	Lecture-discussion

	60min	Contribution of team member	Lecture- discussion
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity
summary	20min	Wrap-up and Feedback	discussion
Resources	Learning Guide #		

### Session Plan-12 (M04-LO1)

Unit of Competence	<b>Develop Business Practice</b>
Module Title	<b>Developing Business Practice</b>
LO 1	Identify business opportunity
Session Objectives:	At the end of this session the trainees shall be able to –

- Investigate and identify Business opportunities
- Undertake feasibility study to determine likely business viability
- Undertake market research on product or service
- Seek assistance with feasibility study of specialist and relevant parties as required
- Evaluate Impact of emerging or changing technology including e-commerce, on business operations
- Assess practicability of business opportunity in line with perceived risks, returns sought and resources available
- Complete business plan for operation

Activities	Nominal Duration	Contents	Methods
Sessions	15 mins	Introduction to module	Orientation
	200 mins	Business opportunities	Lecture-discussion
	250 mins	feasibility study	Lecture-discussion
	150 mins	business viability	Lecture-discussion
	60min	specialist and relevant parties	Lecture- discussion
	80 min	Impact of emerging or changing technology	Lecture- discussion
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity



Summary	10 mins Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> <li>• Kab modules</li> </ul>	

### Session Plan-13 (M04-LO2)

Unit of Competence	<b>Develop Business Practice</b>
Module Title	<b>Developing Business Practice</b>
LO 2	Identify personal business skills
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Identify financial and business skills available and taken into account when business opportunities are researched</li> <li>• Assess and match Personal skills/attributes against those perceived as necessary for a particular business opportunity</li> <li>• identify and assess business risks according to resources available and personal preferences</li> </ul>

Activities	Nominal Duration	Contents	Methods
Sessions	15 mins	Recapitulation	Question & Answer
	200 mins	Business skill	Lecture-discussion
	120 mins	Personal skills/attributes	Lecture-discussion
	180 mins	Business risks	Lecture-discussion
Evaluation	80 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> <li>• Kab modules</li> </ul>		

### Session Plan-14 (M04-LO3)

Unit of Competence	<b>Develop Business Practice</b>
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Module Title	<b>Developing Business Practice</b>		
LO 3	Plan for establishment of business operation		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> <li>• Determine and document business structure and operations</li> <li>• Develop and document procedures to guide operations</li> <li>• Secure financial backing for business operation</li> <li>• Identify and compile business legal and regulatory requirements</li> <li>• Determine human and physical resources required to commence business operation</li> <li>• Develop and implement recruitment strategies</li> </ul>		
<b>Activities</b>	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	90 mins	Business structure	Lecture-discussion
	120 mins	Procedures to guide operations	Lecture-discussion
	135 mins	Financial backing	Lecture-discussion
	90min	Business legal and regulatory requirement	Lecture-discussion
	125min	Human and physical resources	Lecture-discussion
	120min	Recruitment strategies	Lecture-discussion
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> <li>• Kab modules</li> </ul>		

### Session Plan-15 (M04-LO4)

Unit of Competence	<b>Develop Business Practice</b>
Module Title	<b>Developing Business Practice</b>
LO 4	Implement establishment plan
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Undertake marketing of business operation</li> <li>• Obtain physical and human resources to implement business operation</li> <li>• Establish operational unit to support and coordinate business operation</li> <li>• Develop and implement monitoring process for managing operation</li> <li>• Maintain legal documents carefully and relevant records are kept and updated to ensure validity and accessibility</li> <li>• Negotiate and secure contractual procurement rights for goods and services including contracts with relevant people, as required in accordance with the business plan</li> <li>• Identify options for leasing/ownership of business premises and contractual arrangements completed in accordance with the business plan</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	120 mins	Market of business operation	Lecture-discussion
	60min	Management	Lecture-discussion
	80 mins	Operational unit to business	Lecture-discussion
	75 mins	Business monitoring	Lecture-discussion
	90min	Legal documents and records	Lecture-discussion
	65min	Contractual agreement rights for goods, services, and relevant people	Lecture-discussion
	60min	Types of business ownership	Lecture-discussion
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity

Summary	10 mins Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> <li>• Kab modules</li> </ul>	

### Session Plan-16 (M04-LO5)

Unit of Competence	<b>Develop Business Practice</b>
Module Title	<b>Developing Business Practice</b>
LO 5	Review implementation process
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Develop and implement review process for implementation of business operation</li> <li>• Identify improvements in business operation and associated management process</li> <li>• Implement and monitor identified improvements for effectiveness</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	150 mins	Review process of business operation	Lecture-discussion
	130 mins	Improvements in business management	Lecture-discussion
	85 mins	Improvement monitoring	Lecture-discussion
	180min	Quality assurance	Lecture-discussion
Evaluation	120 mins	Accomplishment of LAP Test	Individual Activity
Summary	15 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> <li>• Kab modules</li> </ul>		

### Session Plan-17 (M05-LO1)

Unit of Competence	<b>Install Electrical Apparatus</b>
Module Title	<b>Installing Electrical Apparatus</b>
LO 1	Plan and prepare
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Plan and prepare installation to ensure OH&amp;S policies and procedures are followed</li> <li>• Sequence the work appropriately in accordance with requirements</li> <li>• Consult appropriate personnel to ensure the work is coordinated effectively with others involved on the work site</li> <li>• Checked apparatus against job requirements</li> <li>• Obtain apparatus in accordance with established procedures and to comply with requirements</li> <li>• Determine location in which apparatus is to be installed from job requirements</li> <li>• Obtain Materials necessary to complete the work in accordance with established procedures and checked against job requirements</li> <li>• Obtain tools, equipment and testing devices needed to carry out the installation work in accordance with established procedures and checked for correct operation</li> <li>• Check safety preparatory work to ensure no unnecessary damage has occurred and complies with requirements</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	20 mins	Introduction to module	Question & Answer
	240 mins	Plan and prepare	Lecture-discussion
	180 mins	OH&S policies and procedures	Lecture-discussion & demonstration
	150 mins	Work schedule/sequence/	Lecture-discussion
	30min	Consultation about work	Lecture-discussion
	60min	job requirements	Lecture-discussion
	60min	Application of 3S	Lecture-discussion
	280 min	Electrical safety	Lecture-discussion

	120min	Tools, equipment and testing devices	Lecture-discussion & demonstration
Evaluation	120 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #</li> </ul>		

### Session Plan-18 (M05-LO2)

Unit of Competence	<b>Install Electrical Apparatus</b>
Module Title	<b>Installing Electrical Apparatus</b>
LO 2	Install apparatus
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>Follow OH&amp;S policies and procedures for installing electrical apparatus</li> <li>Install apparatus in accordance with requirements, without damage or distortion to the surrounding environment or services</li> <li>Carry out variation to apparatus installation in accordance to customer/client requirements</li> <li>Terminate and connect apparatus in accordance with requirements</li> <li>Respond unplanned events or conditions in accordance with established procedures</li> <li>Obtain approval in accordance with established procedures from appropriate personnel before any contingencies are implemented. On-going checks of the quality of the work are undertaken in accordance with established procedures.</li> <li>Install electrical apparatus with several wire (green/yellow) for protection earth on Metal body</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	20 mins	Recapitulation	Question & Answer
	240 mins	Electrical Apparatus	Lecture-discussion & demonstration
	600 mins	Electrical apparatus installation	Lecture-discussion & demonstration
	150 mins	customer/client requirements	Lecture-discussion
	60min	Unplanned events or conditions	Lecture-discussion

	60 min	job requirements	Lecture-discussion
	120 min	contingencies	Lecture-discussion
	120 min	Wire Colour code	Lecture-discussion & demonstration
Evaluation	300 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #</li> </ul>		

### Session Plan-19 (M05-LO3)

Unit of Competence	<b>Install Electrical Apparatus</b>
Module Title	<b>Installing Electrical Apparatus</b>
LO 3	<b>Inspect and notify completion of work</b>
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>Undertake final inspections to ensure the installed apparatus conforms to requirements</li> <li>Notify work completion in accordance with established procedures.</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	300 mins	Inspection and commission	Lecture-discussion & demonstration
	240mins	Notification of wok completion	Lecture-discussion & demonstration
Evaluation	60mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of
Resources	<ul style="list-style-type: none"> <li>Learning Guide #</li> </ul>		

### Session Plan-20 (M05-LO4)

Unit of Competence	<b>Install Electrical Apparatus</b>
Module Title	<b>Installing Electrical Apparatus</b>

LO 4	<b>Clean up</b>		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> <li>• Clear work area and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification</li> <li>• Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations and standard work practices</li> </ul>		
	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	240 mins	materials dispose , reuse or recycle	Lecture-discussion & demonstration
	150 mins	legislation/regulations/codes of practice and job specification	Lecture-discussion
	120min	Application of 3S	Lecture-discussion
Evaluation	120 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

### Session Plan-21 (M06-LO1)

Unit of Competence	<b>Install and Terminate Wiring System</b>
Module Title	<b>Installing and Terminating Wiring System</b>
LO 1	Plan and Prepare
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Plan and prepare Installation to ensure OH&amp;S policies and procedures are followed, the work is appropriately sequenced in accordance with requirements</li> <li>• Consult appropriate personnel to ensure the work is coordinated effectively with others involved on the work site</li> <li>• Check wiring systems' components against job requirements</li> </ul>



- Obtain fitting accessories in accordance with established procedures and to comply with requirements
- Determine location in which specific items of accessories, apparatus and circuits are to be installed from job requirements
- Obtain materials necessary to complete the work in accordance with established procedures and checked against job requirement
- Obtain tools, equipment and testing devices needed to carry out the installation work in accordance with established procedures and checked for correct operation and safety
- Check preparatory work is checked to ensure no unnecessary damage has occurred and complies with requirements

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Introduction to module	discussion
	240 mins	OH&S policies and procedures	Lecture-discussion & demonstration
	180 mins	Work schedule	Lecture-discussion
	600min	Wiring systems	Lecture-discussion & demonstration
	300min	Fitting Accessories	Lecture-discussion & demonstration
	240 min	Short circuit & over load	Lecture-discussion
Evaluation	120 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

### **Session Plan-22 (M06-LO2)**

Unit of Competence	<b>Install and Terminate Wiring System</b>
Module Title	<b>Installing and Terminating Wiring System</b>
LO 2	Perform installation and termination of wiring system
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Follow OHS policies and procedures for installing electrical wiring systems</li> </ul>

- Install wiring systems in accordance with requirements, without damage or distortion to the surrounding environment or services
- Terminate and connect accessories in accordance with requirements
- Respond unplanned events or conditions to in accordance with established procedures
- Obtain Approval in accordance with established procedures from appropriate personnel before any contingencies are implemented

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	480 mins	Wire termination	Lecture-discussion & demonstration
	1200 mins	Electrical theory principle	Lecture-discussion & demonstration
	300 mins	Types of conductor	Lecture-discussion
	600 min	Wire current capacity	Lecture-discussion
Evaluation	180 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

### **Session Plan-23 (M06-LO3)**

Unit of Competence	<b>Install and Terminate Wiring System</b>
Module Title	<b>Installing and Terminating Wiring System</b>
LO 3	<b>Inspect &amp; notify completion of work</b>
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Undertake final inspections to ensure the installed apparatus conforms to requirements</li> <li>• Notify work completion in accordance with established procedures</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	480 mins	Inspection and commission	Lecture-discussion & demonstration
	170 mins	Notification of wok completion	Lecture-discussion & demonstration
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

### **Session Plan-23 (M06-LO3)**

Unit of Competence	<b>Install and Terminate Wiring System</b>
Module Title	<b>Installing and Terminating Wiring System</b>
LO 4	<b>Clean up</b>
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Clear work area and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification</li> <li>• Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations and standard work practices.</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	380 mins	materials dispose , reuse or recycle	Lecture-discussion & demonstration
	180min	legislation/regulations/codes of practice and job specification	Lecture-discussion
	120 mins	Application of 3S	Lecture-discussion & demonstration
Evaluation	60 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers

Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>
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### Session Plan-24 (M07-LO1)

Unit of Competence	<b>Install Electrical Circuit Protection</b>
Module Title	<b>Installing Electrical Circuit Protection</b>
LO 1	Plan and Prepare for fault findings
Session Objectives:	At the end of this session the trainees shall be able to – <ul style="list-style-type: none"> <li>• communicate and confirm Instructions for the preparation of the work activity are to ensure clear understanding</li> <li>• Identify and check tools, equipment and PPE needed to install electrical wiring to ensure they work correctly as intended and are safe to use in accordance with established procedures</li> <li>• Obtain materials needed for work in accordance with established procedures</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Introduction to module	Orientation
	240 mins	Tools, equipment and PPE	Lecture-discussion & demonstration
	90min	Work area	demonstration
	120 mins	Required material	Lecture-discussion & demonstration
Evaluation	120 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

### Session Plan-25 (M07-LO2)

Unit of Competence	<b>Install Electrical Circuit Protection</b>
Module Title	<b>Installing Electrical Circuit Protection</b>
LO 2	Install electrical

		protection system	
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> <li>• Follow safety procedures throughout the process of installation</li> <li>• Perform correct procedures for installation of electrical protection system in line with job requirements and PEC</li> <li>• Follow schedule of work to ensure work is completed in an agreed time, to a quality standard and with a minimum waste</li> <li>• Seek further instructions from a supervisor if unplanned events or conditions occur</li> <li>• Do on-going checks of quality of work in accordance with instructions and requirements</li> </ul>		
	Nominal Duration	Contents	Methods
Sessions	10 mins	Recapitulation	Question & Answer
	240 mins	Safety procedures	Lecture-discussion & demonstration
	1200 min	Electrical protection	demonstration
	240 mins	Electrical Protection devices	Lecture-discussion & demonstration
	60 min	Work schedule	Lecture-discussion
	480min	Arrangement of protection devices in electrical installation	Lecture-discussion & demonstration
Evaluation	180 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

### Session Plan-26 (M07-LO3)

Unit of Competence	Install Electrical Circuit Protection
Module Title	Installing Electrical Circuit Protection
LO 3	Notify completion of work

Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> <li>• Make final checks to ensure the work conforms with instructions and requirements</li> <li>• Notify completion of work</li> <li>• Clean, check and return tools, equipment and any surplus resources and materials, where appropriate to storage in accordance with established procedures</li> <li>• Clean and make Work area ready for next task</li> </ul>		
	Nominal Duration	Contents	Methods
Sessions	10 mins	Recapitulation	Question & Answer
	120 mins	Work instruction	Lecture-discussion & demonstration
	120 mins	Supervision	Lecture-discussion & demonstration
	30min	Apply 3Ss	Lecture-discussion & demonstration
Evaluation	50 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

### Session Plan-27 (M07-LO4)

Unit of Competence	<b>Install Electrical Circuit Protection</b>
Module Title	<b>Installing Electrical Circuit Protection</b>
LO 4	<b>Clean up</b>
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Clear work area and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification</li> <li>• Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations and standard work practices</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	90 mins	materials dispose , reuse or recycle	Lecture-discussion & demonstration
	180 mins	legislation/regulations/codes of practice and job specification	Lecture-discussion
	30min	Application of 3S	Lecture-discussion & demonstration
Evaluation	40 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

### **Session Plan-28 (M08-LO1)**

Unit of Competence	<b>Connect Wiring System &amp; Equipment</b>
Module Title	<b>Connecting Wiring System &amp; Equipment</b>
LO 1	Plan and Prepare
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Work within a safe system of work and that you identify any foreseeable hazards relating to the connection of wiring systems, wiring enclosures and equipment</li> <li>• Identify accurately the means of electrical isolation prior to connection when required</li> <li>• Carry out isolation procedures to ensure a safe connection in accordance with electrical regulations and approved procedures</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Introduction to module	Question & Answer
	120 mins	Electrical hazards	Lecture-discussion
	600 mins	wiring enclosures and equipment	Lecture-discussion & demonstration

	300n	means of electrical isolation	Lecture-discussion & demonstratio
	60min	IEE regulation	Lecture-discussion
Evaluation	180 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #</li> </ul>		

### Session Plan-29 (M08-LO2)

Unit of Competence	<b>Connect Wiring System &amp; Equipment</b>
Module Title	<b>Connecting Wiring System &amp; Equipment</b>
LO 2	<b>Connect Wiring System &amp; Equipment</b>
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>Make connections in accordance with specifications and comply with IEE wiring regulations as specified in the most recent Standard for Electrical Installations</li> <li>Check the connections are electrically and mechanically sound, and ensure that they are identified correctly and clearly</li> <li>Take safe and sensible action to remedy any identified defects after connection has taken place</li> </ul>

	<b>Nominal Duration</b>	<b>Contents</b>	<b>Methods</b>
Sessions	10 mins	Recapitulation	Question & Answer
	180 mins	IEE wiring regulations	Lecture-discussion & demonstration
	300 mins	Standard for Electrical Installations	Lecture-discussion
	720min	Equipment connection	Lecture-discussion & demonstration
	180 min	Circuit test	Lecture-discussion & demonstration
Evaluation	240 mins	Accomplishment of LAP Test	Individual Activity



Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #</li> </ul>		

### Session Plan-30 (M08-LO3)

Unit of Competence	Connect Wiring System & Equipment
Module Title	Connecting Wiring System & Equipment
LO 3	Inspect and notify completion of work
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>Make final checks to ensure the work conforms with instructions and requirements</li> <li>Notify supervisor upon completion of work</li> <li>Clean, check and return tools, equipment and any surplus resources and materials , where appropriate, to storage in accordance with established procedures</li> </ul>

	Nominal Duration	Contents	Methods
Sessions	10 mins	Recapitulation	Question & Answer
	240 mins	Work instruction	Lecture-discussion & demonstration
	120 mins	Inspection & Supervision	Lecture-discussion
	60 min	Apply 3Ss	Lecture-discussion & demonstration
Evaluation	60mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #</li> </ul>		

### Session Plan-31 (M09-LO1)

Unit of Competence	Install Wiring System Using Rigid Steel Metallic Conduit
Module Title	Installing Wiring System Using Rigid Steel Metallic Conduit
LO 1	Plan and Prepare
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Confirm the existing electrical supply in accordance with laid down procedure</li> <li>• Follow agreed procedures to ensure the co-ordination of site services and the activities of other trades</li> <li>• Identify the means of electrical isolation accurately prior to commencing installation when required s</li> <li>• Carried out Isolation procedures to ensure a safe installation in accordance with electrical regulations and approved procedures</li> <li>• measure and mark all locations out for wiring systems, wiring enclosures and equipment in accordance with electrical regulations and to meet an agreed specification</li> <li>• check the planned locations for their sensitivity, visually acceptable and are in accordance with other site services</li> </ul>

	Nominal Duration	Contents	Methods
Sessions	20 mins	Introduction to module	Question & Answer
	240 mins	electrical supply	Lecture-discussion & demonstration
	120 mins	electrical isolation	Lecture-discussion
	60min	Isolation procedures	Lecture-discussion & demonstration
	180 min	Rigid steel metallic conduit	Lecture-discussion & demonstration
	480min	Measurement and mark for wiring systems	Lecture-discussion
	240 min	Types and uses of electrical tools, testing instruments and equipment	Lecture-discussion
Evaluation	120 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test

		Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #</li> </ul>	

### Session Plan-32 (M09-LO2)

Unit of Competence	Install Wiring System Using Rigid Steel Metallic Conduit
Module Title	Installing Wiring System Using Rigid Steel Metallic Conduit
LO 2	Install Wiring System
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>The wiring systems, wiring enclosures and equipment fixed safely and in accordance with relevant regulations and manufacturers' instructions</li> <li>Test data is recorded in the format required by the job specifications and quality assurance procedures</li> </ul>

	Nominal Duration	Contents	Methods
Sessions	10 mins	Recapitulation	Question & Answer
	480 mins	electrical drawings	Lecture-discussion & demonstration
	720 mins	wiring enclosures & Equipment	Lecture-discussion
	480 min	Methods of fixing wiring system	Lecture-discussion & demonstration
	120min	Testing and recording data	Lecture-discussion
Evaluation	180 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>Learning Guide #</li> </ul>		

### Session Plan-33 (M09-LO3)

Unit of Competence	Install Wiring System Using Rigid Steel Metallic Conduit
Module Title	Installing Wiring System Using Rigid Steel Metallic Conduit
LO 3	Inspect and notify completion of work
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> <li>• Report is done to relevant people those necessary variations to the planned programme of work</li> <li>• The appropriate action is sought from the relevant people.</li> </ul>

	Nominal Duration	Contents	Methods
Sessions	10 mins	Recapitulation	Question & Answer
	90 mins	Report writing	Lecture-discussion & demonstration
	180 mins	OHS procedures and regulations	Lecture-discussion
	240min	Circuit Inspection	Lecture-discussion & demonstration
	60 min	Apply 3Ss	Lecture-discussion
Evaluation	90 mins	Accomplishment of LAP Test	Individual Activity
Summary	10 mins	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> <li>• Learning Guide #</li> </ul>		

The END

## Teacher Evaluation Guide

### Key to Corrections (for Learning Guides)

Learning Guide #1
Answers for self-check 1
Answers for self-check 2
Answers for self-check 3
Answers for self-check N
Learning Guide #2
Answers for self-check 1
Answers for self-check 2

**Answers for self-check 3**

**Answers for self-check N**

**Learning Guide #3**

**Answers for self-check 1**

**Answers for self-check 2**

**Answers for self-check 3**

**Answers for self-check N**

**Learning Guide #N**

**Answers for self-check 1**

**Answers for self-check 2**

**Answers for self-check 3**

## Answers for self-check N

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#### The trainers who developed the curriculum

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