



NAME OF OROMIA TVET- BUREAU

Install construction works LEVEL I

Teacher's Guide

TTLM Code: CON ICW1 TTLM 0519 v1

Introduction

This Teacher's Guide is developed to assist you in delivering the **;-Installation construction works level I** training program. It is usually designed as a resource to support the learning activity.

The **;-Installation construction works level I** Training is developed to equip the trainees with the required competences in Apply 5S Procedures, Receive and Respond to Workplace Communication, Work with Others, Demonstrate Work Values, Develop Understanding of Entrepreneurship, Apply Quality Standards, Carry-Out Measurements and Simple Calculations , Use Construction Hand and Power Tools, Read and Interpret Plans and Working Drawings, Perform Bench Work, Prepare Surfaces for Construction Works, Set out /Level Vertical and Horizontal Angles, Perform Roughing-In Activities for Communication and Distribution Systems, Install Wiring Systems Using PVC and Flexible conduits, Install Communication Cables, Provide Water Drainage and Install, Service and Maintain Water Supply System and Components. The Program is consists of seventeen (17) learning modules covering the seventeen (17) units of competence.

This teacher's guide covers all the seventeen (17) 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

Unit of Competence	Learning Modules and Code
CON ICW1 01 021 Carry-Out Measurements and Simple Calculations	CON ICW1 M01 0519 Applying 5S Procedures
CON ICW1 02 021 Use Construction Hand and Power Tools	CON ICW1 M02 0519 Receiving and Respond to Workplace Communication
CON ICW1 03 021 Read and Interpret Plans and Working Drawings	CON ICW1 M03 0519 Working with Others

CON ICW1 05 021	Prepare Surfaces for Construction Works	CON ICW1 M04 0519 Demonstrating Work Values
CON ICW1 06 021	Set out /Level Vertical and Horizontal Angles	CON ICW1 M05 0519 Developing Understanding of Entrepreneurship
CON ICW1 07 021	Perform Roughing-In Activities for Communication and Distribution Systems	CON ICW1 M06 0519 Applying Quality Standards
CON ICW1 08 021	Install Wiring Systems Using PVC and Flexible conduits	CON ICW1 M07 0519 Carrying-Out Measurements and Simple Calculations
CON ICW1 09 021	Install Communication Cables	CON ICW1 M08 0519 Using Construction Hand and Power Tools
CON ICW1 10 021	Install, Service and Maintain Water Supply System and Components	CON ICW1 M09 0519 Reading and Interpret Plans and Working Drawings
CON ICW1 11 021	Provide Water Drainage	CON ICW1 M10 0519 Performing Bench Work
CON ICW1 12 021	Apply Quality Standards	CON ICW1 M11 0519 Preparing Surfaces for Construction Works
CON ICW1 14 021	Receive and Respond to Workplace Communication	CON ICW1 M12 0519 Setting -out /Level Vertical and Horizontal Angles
CON ICW1 14 021	Perform Bench Work	CON ICW1 M13 0519 Performing Roughing-In Activities for Communication and Distribution Systems
CON ICW1 15 021	Demonstrate Work Values	CON ICW1 M14 0519 Installing Wiring Systems Using PVC and Flexible conduits
CON ICW1 16 021	Develop Understanding of Entrepreneurship	CON ICW1 M15 0519 Installing Communication Cables
CON ICW1 17 021	Applying 5S Procedures	CON ICW1 16 021 Providing Water Drainage
CON ICW113 05021	Work with Others	CON ICW1 17 021 Installing, Service and Maintain Water Supply System and Components

Learning Outcomes and Assessment Criteria

Unit of Competence	Applying 5S Procedures
Module Title	CON ICW1 M01 0519 Applying 5S Procedures
LO 1	Develop understanding of quality system
Assessment Criteria	<ul style="list-style-type: none"> • Discuss quality assurance procedures of the enterprise or organization • Understand the relationship of quality system and continuous improvement in the workplace • Identify and relate to workplace requirements the purpose and elements of quality assurance (QA) system • Explain the 5S system as part of the quality assurance of the work organization
LO 2	Sort needed items from unneeded
Assessment Criteria	<p>This learning out come may be assessed by</p> <ul style="list-style-type: none"> • Identify all items in the work area • Distinguish between essential and non-essential items • Sort items to achieve deliverables and value expected by downstream and final customers • Sort items required for regulatory or other required purposes • Place any non-essential item in a appropriate place other than the workplace • Regularly check that only essential items are in the work area
LO 3	Set workplace in order
Assessment Criteria	<p>Learning out come may be assessed in</p> <ul style="list-style-type: none"> • Identify the best location for each essential item • Place each essential item in its assigned location • After use immediately return each essential item to its assigned location • Regularly check that each essential item is in its assigned location • Regularly check that each essential item is in its assigned location

LO 4	Shine work area
Assessment Criteria	<ul style="list-style-type: none"> • Keep the work area clean and tidy at all times • Conduct regular housekeeping activities during shift • clean Ensure the work area neat, and tidy at both beginning and end of shift
LO 5	Standardize activities
Assessment Criteria	<ul style="list-style-type: none"> • Follow <i>procedures</i> • Follow checklists for activities, where available • Keep the work area to specified standard
LO 6	Sustain 5S system
Assessment Criteria	<p>This Learning out come may be assessed in</p> <ul style="list-style-type: none"> • Clean up after completion of job and before commencing next job or end of shift • Identify situations where compliance to standards is unlikely and take actions specified in procedures • Inspect work area regularly for compliance to specified standard • improvements to lift the level of compliance in the workplace

Unit of Competence	Receive Responding to Workplace Communication
Module Title	CON SCW1 M02 0519 Receiving and Responding to Workplace Communication

LO 1	Follow routine spoken messages
Assessment Criteria	<ul style="list-style-type: none"> • Clean up after completion of job and before commencing next job or end of shift • Identify situations where compliance to standards is unlikely and take actions specified in procedures • Inspect work area regularly for compliance to specified standard • Recommend improvements to lift the level of compliance in the workplace
LO 2	Perform workplace duties following written notices
Assessment Criteria	<ul style="list-style-type: none"> • interpret Written notices and instructions read and correctly in accordance with organizational guidelines • follow Routine written instruction are in sequence • give Feedback is to workplace supervisor based on the instructions/information received

Unit of Competence	Work with Others
Module Title	CON ICW1 M03 0519 Working with Others
LO 1	Develop effective workplace relationship
Assessment Criteria	<ul style="list-style-type: none"> • This Learning outcome may be assessed in Provided Duties and responsibilities are done in a positive manner to promote cooperation and good relationship • Assistance is sought from workgroup when difficulties arise and addressed through discussions • Feedback provided by others in the team is encouraged, acknowledged and acted upon • Differences in personal values and beliefs are respected and acknowledged in the development

LO 2	Contribute to work group activities
Assessment Criteria	<p>Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Support is provided to team members to ensure workgroup goals are met • Constructive contributions to workgroup goals and tasks are made according to organizational requirements • Information relevant to work is shared with team members to ensure designated goals are met

Unit of Competence	CON ICW1 M04 0519 Demonstrating Work Values
Module Title	Demonstrating Work Values
LO 1	CON ICW1 M04 0519 Define the purpose of work
Assessment Criteria	<p>Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • One's unique sense of purpose for working and the 'whys' of work are identified, reflected on and clearly defined for one's development as a person and as a member of society. • Personal mission is in harmony with company's values
LO 2	Apply work values/ethics
Assessment Criteria	<p>Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Work values/ethics/concepts are classified and reaffirmed in accordance with the transparent company ethical standards, policies and guidelines. • Work practices are undertaken in compliance with

	<p>industry work ethical standards, organizational policy and guidelines</p> <ul style="list-style-type: none"> • Personal behavior and relationships with co-workers and/or clients are conducted in accordance with ethical standards, policy and guidelines. • Company resources are used in accordance with transparent company ethical standard, policies and guidelines
LO 3	Deal with ethical problems
Assessment Criteria	<p>This Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Company ethical standards, organizational policy and guidelines on the prevention and report of unethical conduct are accessed and applied in accordance with transparent company ethical standard, policies and guidelines. • Work incidents/situations are reported and/or resolved in accordance with company protocol/guidelines. • Resolution and/or referral of ethical problems identified are used as learning opportunities
LO 4	Maintain integrity of conduct in the workplace
Assessment Criteria	<ul style="list-style-type: none"> • This Learning outcome may be assessed in Personal work practices and values are demonstrated consistently with acceptable ethical conduct and company's core values. • Instructions to co-workers are provided based on ethical, lawful and reasonable directives. Company values/practices are shared with co-workers using appropriate behavior and language.

Unit of Competence	Develop Understanding of Entrepreneurship
Module Title	CON ICW1 M05 0519 Developing Understanding of Entrepreneurship
LO 1	Describe and explain the principles, concept and scope of entrepreneurship
Assessment Criteria	<p>This Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • The principles, concept and terminology of entrepreneurship are analyzed and discussed. • The different / various forms of enterprises in the community are identified and their roles understood • The identified enterprises are categorized and classified • The terms and elements involved in the concept of enterprising, both on a personal level and in the context of being enterprising in business are identified and interpreted • Functions of entrepreneurship in business and how the entrepreneurs improved business and economic environment are explained
LO 2	Discuss how to become entrepreneur
Assessment Criteria	<p>Competence may be accessed through:</p> <ul style="list-style-type: none"> • Self-employment as an alternative option for an individual economic independence and personal growth is discussed and analyzed • Advantages and disadvantages of self-employment are discussed and explained • Entrepreneurial characteristics and traits are identified and discussed • Self-potential is assessed to determine if qualified to become future entrepreneur • 2.5 Major competences of successful

	entrepreneurship are identified and explained
LO 3	Discuss how to organize an enterprise
Assessment Criteria	<p>Competence may be accessed through:</p> <ul style="list-style-type: none"> • The importance and role of business entrepreneurship in the society are discussed and correlated to the operations of the economy • Facts about small and medium enterprises are discussed, clarified and understood • Key success factor in setting up small and medium business are identified and explained • Business opportunities are identified and assessed • Business ideas are generated using appropriate tools, techniques and steps • Procedures for identifying suitable market for business are discussed and understood • Major factors to consider in selecting a location for a business are identified and discussed • Basic types of business ownership are identified and explained • Amount of money needed to start an enterprise estimated and distinction between pre operations and initial operation payments clarified • Advantages and disadvantages of using various sources of capital to start an enterprise are identified
LO 4	Discuss how to operate an enterprise
Assessment Criteria	<ul style="list-style-type: none"> • This learning outcome may be accessed through Disadvantages and advantages of three

	<p>alternative means of becoming an entrepreneur are identified and understood</p> <ul style="list-style-type: none"> • Process of hiring and managing people is discussed and explained • The importance and techniques of managing time are discussed and understood • The techniques and procedures of managing sales are discussed and explained • Factors to consider in selecting suppliers and the steps to follow when doing business with them are identified and discussed • Awareness of how new technologies can affect small and medium business are developed • Characteristics of appropriate technology for use in small and medium business are identified and explained • Different types of cost that occur in a business and how to manage them are discussed and understood • Factors and procedures in knowing the cost of the enterprise are discussed and understood • Importance of financial record keeping and preparing simple financial statement are explained and understood • The application of self-management skills and negotiation skills are discussed in operating a business • Risk assessment and management of business enterprise are
LO 5	Develop one's own business plan
Assessment Criteria	<ul style="list-style-type: none"> • Process of preparing/ writing a business plan is

	<p>discussed and applied</p> <ul style="list-style-type: none"> • Standard structure and format are applied in preparing business plan • Findings of the business plan are interpreted, assessed and analyzed • Feasibility of the business idea is made clear and understandable • Problems that may arise or encounter when starting a business are identified and understand • Techniques and procedures in obtaining and sourcing information are discussed and understood • Vertical and horizontal positioning of conduit on 90 degree bending is performed according to given tolerance
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Unit of Competence	Applying Quality Standards
Module Title	CON ICW1 M06 0519 Apply Quality Standards
LO 1	Assess own work
Assessment Criteria	<p>This Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Completed work is checked against workplace standards relevant to the operations being undertaken • An understanding is demonstrated on how the work activities and completed work relate to the next construction process and to the final appearance of the construction • Faulty pieces or final construction are identified and isolated in accordance with company policies and procedures • Faults and any identified causes are recorded and reported in accordance with workplace procedures
LO 2	. Assess quality of received articles

Assessment Criteria	<p>This Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Received materials, articles, component parts or final construction are checked against workplace standards and specifications for such things as size, color, fabric, alignment and finish • Materials, articles or constructions are measured using the appropriate measuring instruments in accordance with workplace procedures • An understanding is demonstrated of how the received materials or component parts relate to the current operation and how they contribute to the final appearance of the construction • Faulty material or component parts related to the operator's work are identified and isolated • Where required, the faults and any identified causes are recorded and/or reported to the supervisor concerned in accordance with workplace procedures • Causes of any identified faults are identified and corrective actions are taken in accordance with workplace procedures
LO 3	Record information
Assessment Criteria	<p>This Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Materials, component parts or constructions are measured, as required, using the appropriate measuring instruments in accordance with workplace procedures • Basic information on the quality performance is recorded in accordance with workplace procedures • Business ideas are generated using appropriate tools, techniques and steps • Records of work quality are maintained according to the requirements
LO 4	Study causes of quality deviations
Assessment Criteria	<p>This Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Causes of deviations from specified final construction quality standards for materials, component parts or final construction are investigated and reported, as required, using the appropriate measuring techniques in accordance with workplace procedures

	<ul style="list-style-type: none"> • Suitable preventive action is recommended based on workplace quality standards and identified causes of deviation from specified quality standards and parameters of materials or final construction
LO 5	Complete documentation
Assessment Criteria	<p>his Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Information on quality and other indicators of construction performance is recorded. • All construction processes and outcomes are recorded.
Unit of Competence	Carry out Measurements and Simple Calculations
Module Title	CON ICW1 M07 0511 Carrying out Measurements and Simple Calculations
LO 1	Select measuring instruments
Assessment Criteria	<p>his Learning outcome may be assessed</p> <ul style="list-style-type: none"> • Object or component to be measured is identified, classified and interpreted according to the appropriate regular geometric shape • Measuring tools are selected/identified as per object to be measured or job requirements • Correct specifications are obtained from relevant sources • Appropriate measuring instruments are selected according to job requirements • Alternative measuring tools are used without sacrificing cost and quality of work
LO 2	Carry out measurements and calculations
Assessment Criteria	<p>his Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Accurate measurements and calculation are obtained according to job requirements • Alternative measuring tools are used without sacrificing cost and quality of work • Calculation needed to complete work tasks are performed using the four basic process of addition (+),

	<p>subtraction (-), multiplication (x) and division (/) including but not limited to: trigonometric functions, algebraic computations</p> <ul style="list-style-type: none"> • Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks • Numerical computation is self-checked and corrected for accuracy • Instruments are read to the limit of accuracy of the tool • Systems of measurement identified and converted according to job requirements/ISO • Work pieces are measured according to job requirements
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Unit of Competence	Using Construction Hand and Power Tools
Module Title	CON ICW1 M08 0519 Using Construction Hand and Power Tools
LO 1	Identify hand and power tools
Assessment Criteria	<p>this Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • OH&S requirements associated with the use of construction hand and power tools, and the workplace environment, are adhered to throughout the work • Quality assurance requirements for company operations are identified and adhered to • Types of hand and power tools and their functions are identified • Power source(s), and access to power supply is recognized
LO 2	Select appropriate hand tools
Assessment Criteria	<p>Learning outcome may be assessed</p> <ul style="list-style-type: none"> • Hand tools are selected consistent with the needs of the job • Hand tools are checked for serviceability and safety and any faults reported to supervisor in accordance with workplace requirements

	<ul style="list-style-type: none"> • Equipment is selected to hold, position or support material for hand tools application
LO 3	Use appropriate hand tools
Assessment Criteria	<p>this Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Material is located and held in position for hand tool application • Hand tools are safely and effectively used according to their intended use • Hand tools are safely located when not in immediate use
LO 4	Select appropriate power tools
Assessment Criteria	<p>this Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • Material is located and held in position for power tool application • • Power tools are safely and effectively used in application processes • Power tools are safely switched and located when not in use
LO 5	Use appropriate power tools
Assessment Criteria	<p>this Learning outcome may be assessed</p> <ul style="list-style-type: none"> • Material is located and held in position for power tool application • Power tools are safely and effectively used in application processes • Power tools are safely switched and located when not in use
LO 6	Clean up work area and tools
Assessment Criteria	<ul style="list-style-type: none"> • Work area is cleared in accordance with workplace procedures • Tools and equipment are cleaned, checked, maintained

	<p>and stored in accordance with manufacturers' recommendations and workplace procedures</p> <ul style="list-style-type: none"> • Documentation is completed in accordance with workplace requirements
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Unit of Competence	Read and Interpret Plans and Working Drawing
Module Title	CON ICW1 M09 0519 Reading and Interpreting Plans and Working Drawing
LO 1	Identify types of drawings and their purposes
Assessment Criteria	<p>this Learning outcome may be assessed in</p> <ul style="list-style-type: none"> • The purpose and advantage of different types of drawing are identified. • Different aspects of drawings are identified.
LO 2	Apply commonly used symbols and abbreviations.
Assessment Criteria	<p>Learning outcome may be accessed through</p> <ul style="list-style-type: none"> • Commonly used symbols and abbreviations on drawings are identified, understood and applied. • Common building and construction terms used on drawings are identified, understood and applied.
LO 3	Locate and identify key features on a site plan.
Assessment Criteria	<p>Learning outcome may be accessed through</p> <ul style="list-style-type: none"> • The building site is identified from location drawings. • True north and building orientation are identified from details provided on the site plan. The key features of the site plan are identified.
LO 4	Identify and locate key features on drawings.
Assessment Criteria	<p>Learning outcome may be accessed through</p> <ul style="list-style-type: none"> • The key features of plans, elevations and sections are identified. • Client requested variations to standard plans are identified on drawings
LO 5	Correctly read and interpret specifications.
Assessment Criteria	<p>Learning outcome may be accessed in:</p> <ul style="list-style-type: none"> • Customer variations to standard specifications are identified.

	<ul style="list-style-type: none"> • Correct interpretations of essential elements are applied to estimation, planning and supervisory tasks and communicated. • Building codes or standards affecting the work to be undertaken are identified, including references to Ethiopian standards and the Building Code
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Unit of Competence	Perform Bench Work
Module Title	CON ICW M10 0519 Performing Bench Work
LO 1	Layout and mark dimensions/ features on work piece
Assessment Criteria	<p>Learning outcome may be accessed in:</p> <ul style="list-style-type: none"> • Materials are selected according to the requirements specified in the drawing. • Dimensions/features are laid out and marked in accordance with drawing specifications using bench work tools and equipment. • Lay outing and marking are performed applying knowledge on safety procedures and using personal protective devices
LO 2	Perform necessary operation
Assessment Criteria	<p>Learning outcome may be accessed in Demonstrate skills</p> <ul style="list-style-type: none"> • Pipes are cut, reamed and threaded within tolerance specified in the drawing. • Pipe cutter are used properly to avoid damage and accident • Rectangular or round blocks are cut, chipped or filed within tolerance specified in the drawing. • Broken or dull hacksaw blades are replaced according to requirements. • Bench work operations are performed applying knowledge on safety procedures and using personal protective devices.

LO 3	Drill and lap holes
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Hole is drilled, reamed, spot-faced and lapped to drawing specification. • Drilling, reaming or lapping holes are performed according to recommended sequence. • Operations are performed applying knowledge on safety procedures and using personal protective devices. •
LO 4	Bend PVC/ Metal Conduit
Assessment Criteria	<ul style="list-style-type: none"> • Type of conduit is selected according to requirement specified in the drawing • Uniform radius of angles are performed with tolerable material condition • Vertical and horizontal positioning of conduit on 90 degree bending is performed according to given tolerance • Conduit bending is performed applying knowledge on 5'S, safety procedure and the use of PPE • Operations are performed applying knowledge on safety procedures and using personal protective devices.
LO 5	Off –set PVC/Metal conduit
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Materials are selected according to requirement specified in the drawing • Conduit off-setting is performed within tolerable material condition applying knowledge on 5'S, safety procedure and the use of PPE • Uniform off-set is performed according to requirement specified in the drawing
LO 6	Splice wires and joining

Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Splicing and joining is performed according to the type of conductors specified in the drawing • Correct splicing, joining is performed according to industry standard • Wire splicing and joining is performed without damage on the wire , applying knowledge on 5'S, safety procedure and use of PPE
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Unit of Competence	Prepare Surfaces for Construction Work
Module Title	CON ICW1 M11 0519 Preparing Surfaces for Construction Work
LO 1	Plan and prepare
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied • Occupational Health & Safety (OH&S) are followed in accordance with safety plans and policies • Signage/barricade requirements are identified and implemented • Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the • job, checked for serviceability and any faults are rectified or reported prior to commencement • Material quantity requirements are calculated in accordance with plans and/or specifications • Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use • Environmental protection requirements are identified for the project in accordance with environmental plans and regulatory obligations and applied
LO 2	Prepare materials for tiling application

Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Floor and wall tiling materials are checked for product suitability, conformity to specification and compatibility with surface material, preparation and installation technique Activities for material preparation are identified from specifications, manufacturers' or supervisor's instructions • Material preparation is carried out to satisfy the requirements of the application process • Demonstration/Observation with Oral Questioning
LO 3	Prepare surface
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Preparation requirements are identified from site inspection and plans/specifications Hazards, obstructions and attachments are removed, or arrangements made for their removal • Surface preparation tools are selected and set up in accordance with surface condition and job requirements • Tools are used to prepare surface in accordance with manufacturers' specifications and job requirements • All loose or protruding material is removed by sander/grinder and brush so that surface is prepared to specification
LO 4	Prepare underlay and sheeting substrate
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Assistance with underlay preparation is provided under instructions and supervision • Substrate surface is finished to approved surface standards with joints flush and sealed underlay and sheeting substrate are pr
LO 5	Prepare render substrate surface
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Surface mounted construction units and attachments are safely detached, removed or arranged for removal from area and stored • Substrate structure is identified and surfaces are cleaned to remove all contaminants and loose material in accordance with supervisor's instructions

	<ul style="list-style-type: none"> • Materials for splash coat are proportioned and mixed to instructions ready for application to wet surface • Horizontal/vertical surrounds are prepared for tiling process in accordance with type of tile and specified finish • Materials for render coat are proportioned and mixed to instructions ready for application • Surface is scratched, rendered, cured and dried to instructions in accordance with specifications for tile application
LO 6	Patch and fill holes and depressions
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Patching method of hole is determined from type of material surface, size of hole, compatibility of materials and planned finish • Patching materials are selected to suit material surface and mixed to manufacturers' specifications • Material is applied to manufacturers' specifications using appropriate application method • Surface is brushed/washed/scraped clean of surplus material in accordance with type of patching material and material surface • Patched areas are sealed by application of prime or sealing coat, to suit requirements of specified finishes
LO 7	Clean up Work area
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Recycling and disposing waste materials • Maintaining tools and equipment • Performing good housekeeping

Unit of Competence	Setout/ Level Vertical and Horizontal Angles
Module Title	CON ICW1 M12 0519 Setting out/ Level Vertical and Horizontal Angles
LO 1	Plan and prepare

Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied. • Safety requirements are followed in accordance with safety plans and policies. • Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement. • Material quantity requirements are calculated in accordance with plans and/or specifications. • Materials appropriate to the work application are identified, obtained, prepared, safely handled and made ready for use. • Environmental protection requirements are identified for the project in accordance with environmental plans and regulatory obligations and applied
LO 2	Identify and indicate site boundaries
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Survey pegs at corners of site are located and identified in accordance with job drawings and specifications. • String lines are set accurately into position to identify boundaries of site in accordance with site plan and survey pegs.
LO 3	Set out right angled corners
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Corner of building is determined on set building line to true measurement from adjacent boundary and marked with peg in accordance with job drawings and specifications. • Right angle is set up to line from corner peg using triangulation principles. • Hurdles/profiles are installed to approximate level of other hurdles and line set taut to right angled alignment..
LO 4	Building lines are checked for square

Assessment Criteria	<ul style="list-style-type: none"> • Learning outcome may be accessed in • Diagonal measurements are checked for square and lines adjusted to provide square relationship within 5 mm tolerance over minimum diagonal length of 15m. • Measurements are checked for accuracy.
LO 5	Clean up
Assessment Criteria	<ul style="list-style-type: none"> • Work area is cleared and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification. • Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices.

Unit of Competence	Perform Roughing-In Activities for Communication and Distribution Systems
Module Title	ECON ICW1 M13 05119 Performing Roughing-In Activities for Communication and Distribution Systems
LO 1	Install electrical metallic conduit
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Correct drawings are interpreted based on job requirements • Correct quantities of metallic conduit and accessories are determined as per job requirements • Tools and equipment are selected as per job requirements • Conduit is assembled ensuring that fittings are fully inserted and tightened as per job requirements • Conduit is bent with bends not exceeding 90° as per job requirements • Conduit couplings and elbows are installed as per job requirements • Conduit is threaded in line with job requirements • Safety procedures are followed in line with standard

	operating procedures (SOPs)
LO 2	Install wire ways and cable tray
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Correct drawings are interpreted to determine job requirements • Correct quantities of materials are selected as per job requirements • Tools and equipment are selected as per job requirements • Wire ways and cable trays are installed as per job requirements <ul style="list-style-type: none"> • Safety procedures are followed in line with SOPs
LO 3	Install telephone terminal cabinet and distribution frame
Assessment Criteria	<ul style="list-style-type: none"> • Correct drawings are interpreted to determine job requirements • Correct quantities of materials are selected as per job requirements • Tools and equipment are selected as per job requirements • Telephone terminal cabinet is installed as per job requirements • Telephone main distribution is installed as per job requirements • Safety procedures are followed during <i>installation</i> in line with SOP
LO 4	Install cable bridge

Assessment Criteria	<p>Demonstrate skills in:</p> <ul style="list-style-type: none"> • Correct drawings are interpreted based on job requirements • Correct quantities of materials are selected as per job requirements • Tools and equipment are selected as per job requirements • Cable bridge is installed as per job requirements • Safety procedures are followed in line
LO 5	Notify completion of work
Assessment Criteria	<p>Learning outcome may be accessed in Demonstrate skills</p> <ul style="list-style-type: none"> • Final checks are made to ensure that work conforms with instructions and job requirements • Supervisor is notified upon completion of work • Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures • Work area is cleaned up and made safe according to OH&S regulations

Unit of Competence	Install Wiring Systems Using PVC and Flexible conduits
Module Title	CON ICW1 M14 0519 Installing Wiring Systems Using PVC and Flexible conduits
LO 1	Plan and prepare
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • The existing electrical supply is confirmed in accordance with laid down procedure • Agreed procedures are followed to ensure the co-ordination of site services and the activities of other trades • The means of electrical isolation is identified accurately

	<p>prior to commencing installation when required s</p> <ul style="list-style-type: none"> • Isolation procedures are carried out to ensure a safe installation in accordance with electrical regulations and approved procedures • All locations are measured and marked out for wiring systems, wiring enclosures, tools and equipment in accordance with electrical regulations and to meet an agreed specification • The planned locations are checked for their sensitivity, visually acceptable and are in accordance with other site services
LO 2	Install wiring system
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • The wiring systems, using PVC and Flexible Conduits are fixed safely and in accordance with relevant regulations and manufacturers' instructions • Test data is recorded in the format required by the job specifications and quality assurance procedures
LO 3	Inspect and notify completion of work
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Report is done to relevant people those necessary variations to the planned programmed of work • The appropriate action is sought from the relevant people

Unit of Competence	Install Communication Cables
Module Title	CON ICW1 M15 0519 Installing Communication Cables
LO 1	Plan and prepare work
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Installation is planned and prepared to ensure OH&S policies and procedures are followed, the work is appropriately sequenced in accordance with requirements • .Appropriate personnel are consulted to ensure the work is coordinated effectively with others involved on the work site • Components necessary for undertaking installation are checked against job requirements

	<ul style="list-style-type: none"> • Accessories are obtained in accordance with established procedures and to comply with requirements • Location in which specific items of accessories, apparatus and circuits are to be installed is determined from job requirements • Materials necessary to complete the work are obtained in accordance with established procedures and checked against job requirements • 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 • Preparatory work is checked to ensure no unnecessary damage has occurred and complies with requirements
LO 2	. Perform installation of communication cables
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Safety procedures are followed • Correct procedures for installation of communication cables are performed in line with job requirements • Schedule of work is followed to ensure work is completed in an agreed time, to a quality standard and with a minimum waste • Further instructions are sought from a supervisor if unplanned events or conditions occur • On-going checks of quality of work are done in accordance with instructions and Requirements
LO 3	Inspect and notify completion of work
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Final inspections are undertaken to ensure the installed wiring systems conforms to requirements • Work completion is notified in accordance with established procedures

Unit of Competence	Provide Water Drainage
Module Title	CON ICW1 M16 0519 Providing Water Drainage
LO 1	Plan and prepare

Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied. • Safety requirements are followed in accordance with safety plans and policies. • Signage/barricade requirements are identified and implemented. • Plant, tools and equipment selected to carry out tasks that are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement. • Material quantity requirements are calculated in accordance with plans and/or specifications. • Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use. • Environmental protection requirements are identified for the project in accordance with environmental plans and regulatory obligations and applied
LO 2	Install drainage for tiled surface
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Preparing Drainage channels. • Drainage channels and outlets are prepared and positioned to the drainage system for tiled floors. • Tiled floor surface drainage channel and drainage outlets are fixed to specification. • The drainage system is installed as core task of the plumber.

LO 3	Complete work operations and clean up
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Work area is cleared and materials disposed of, reused or recycled in accordance with legislation/regulations/ codes of practice and job specification • Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices
Unit of Competence	Install, Service and Maintain Water Supply System and Components
Module Title	CON ICW1 M17 0519 Installing, Service and Maintain Water Supply System and Components
LO 1	Prepare for work
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Drawings and specifications are obtained • OH&S requirements associated with setting out and installing water services, and the workplace environment, are adhered to throughout the work • Quality assurance requirements are identified and adhered to in accordance with workplace requirements • Tasks are planned and sequenced in conjunction with others involved in or affected by the work • Tools and equipment for setting out and installing water piping systems, including personal safety equipment, are selected and checked for serviceability <p style="margin-left: 40px;">Work area is prepared to support the efficient setting out and installation of water services</p> <p style="margin-left: 40px;">Installing of water services.</p>
LO 2	Identify installation requirements

Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Quantity and type of materials required are calculated from drawings and specifications or site inspection and comply with standards • Materials and equipment are identified and ordered/collected in accordance with workplace procedures • Materials and equipment are checked for compliance with standards, docket/order form and for acceptable condition
LO 3	Install and test pipe system
Assessment Criteria	<ul style="list-style-type: none"> • Pipe lines and fixture connection points are set out in accordance with drawings and specifications or job instructions, with consideration to the location of existing services • Trenches are excavated in accordance with standards and authorities' requirements • Installation of supports and clips are checked for compliance with the job specification, authorities' requirements and manufacturers' specifications • Pipes are installed and jointed in accordance with job specifications, design layout and standards without damage or distortion to pipe work, or surrounding environment and other services
LO 4	Repair defective pipes and fittings
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Defective pipes and fittings are identified, disconnected and replaced with the same model • Replacements are checked to ensure they are free from defects and in accordance with standard

	<p>specification or as required</p> <ul style="list-style-type: none"> • Joints are tightly secured and leak free in accordance with the job requirements • Damaged areas are restored or repaired according to work procedures • Clogged pipes are cleared using appropriate method • Correct usage of tools and equipment is observed in accordance with job requirement • Appropriate PPE are used in accordance with job requirements • Observing correct usage of tools and equipment. • Using Appropriate PPE.
LO 5	Clean up
Assessment Criteria	<p>Learning outcome may be accessed in</p> <ul style="list-style-type: none"> • Defective <i>pipes and fittings</i> are identified, disconnected and replaced with the same model • Replacements are checked to ensure they are free from defects and in accordance with standard specification or as required • Joints are tightly secured and leak free in accordance with the job requirements • Damaged areas are restored or repaired according to work procedures • Clogged pipes are cleared using appropriate method • Correct usage of tools and equipment is observed in accordance with job requirement • Appropriate PPE are used in accordance with job requirements

Training Mechanics

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

Session Plan-1 (M01-LO1)

Unit of Competence	Apply 5S Procedures
Module Title	Applying 5S Procedures
LO 1	Develop understanding of quality system
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Discuss quality assurance procedures of the enterprise or organization • Understand the relationship of quality system and continuous improvement in the workplace • Identify and relate to workplace requirements the purpose and elements of quality assurance (QA) system • Explain the 5S system as part of the quality assurance of the work organization

Activities	Nominal Duration	Contents	Methods
Sessions	20 min	Introduction to the Module	Orientation
	60 min	quality assurance procedures	Lecture-discussion
	70min	elements of quality assurance (QA) system	Lecture-discussion
	60min	purpose workplace requirements	Lecture-discussion
	60min	elements of quality assurance (QA) system	-discussion
	60min	Explaining the 5S system	Discussion
Evaluation	40 min	Accomplishment of LAP Test	Individual Activity
Summary	20 min	Wrap-up and Feedback	Discussion
Resources	<ul style="list-style-type: none"> • Learning Guide #1 • Safety Manual and Guide 		

Session Plan-2 (M01-LO2)

Unit of Competence	Apply 5S Procedures		
Module Title	Applying 5S Procedures		
LO 2	Sort needed items from unneeded		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Distinguish between essential and non-essential items • Expect Sort items to achieve deliverables and value by downstream and final customers • Sort items required for regulatory or other required purposes • Place any non-essential item in a appropriate place other than the workplace • Regularly check that only essential items are in the work area 		
Activities	Nominal Duration	Contents	Methods
Sessions	10min	Recapitulation	
	30min	Identify all <i>items</i> in the work area.	Discussion
	60min	Distinguish between essential and non-essential item	Lecture-discussion
	120 min	Sorting items	discussion
	3180min	Sorting items as required purposes	Group discussion
Evaluation	60 min	Placing any non-essential item for workplace. checking only essential items are in the work area	Individual Activity
Summary	50 min	Wrap-up and Feedback	Question and Answer
Resources	<ul style="list-style-type: none"> • Learning Guide #2 		

Session Plan-3 (M01-LO3)

Unit of Competence	Apply 5S Procedures		
Module Title	Applying 5S Procedures		
LO 3	Set workplace in order		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Identify the best location for each essential item • Place each essential item in its assigned location • Assign After use immediately return each essential item to its location • Regularly check that each essential item is in its assigned location 		
Activities	Nominal Duration	Contents	Methods
Sessions	20 min	Recapitulation	Question & Answer
	60min	Identify the best location for each essential item	Lecture-discussion
	180min	Placing each essential item in its assigned location	group-discussion
	120min	Return each essential item to its assigned location.	discussion and Demonstration
	120min	Checking each essential item is in its assigned location	discussion and Demonstration
Evaluation	35 min	Accomplishment of LAP Test	Individual Activity
Summary	60min	Wrap-up and Feedback	Discussion of LAP Test Answers
Resources	<ul style="list-style-type: none"> • Site plan and drawing • Marking tools • Pegs and string • Learning Guide #3 		

Session Plan-4 (M01-LO4)

Unit of Competence	Apply 5S Procedures
Module Title	Applying 5S Procedures
LO4	Shine work area
Session Objectives	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Clean and Keep the work area tidy at all times • Conduct regular housekeeping activities during shift • Ensure the work area is neat, clean and tidy at both beginning and end of shift

Activities	Nominal Duration	Contents	Methods
Sessions	15 min	Recapitulation	Question & Answer
	60min	Keeping the work area clean	Demonstration
	30 min	Keeping the work area tidy	Lecture-discussion
	60min	Conducting regular housekeeping activities	Lecture-discussion
	60min	Ensure the work area	Lecture - Demonstration
Evaluation	60min	Activity	Individual Activity
Summary	10mins	Wrap-up and Feedback	Question & Answer
Resources	<ul style="list-style-type: none"> • Learning Guide #4 • Sample site plan 		

Session Plan-5 (M01-LO5)

Unit of Competence	Apply 5S Procedures
Module Title	5S Procedures
LO5	Standardize activities.
Session Objectives	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Follow <i>procedures</i> • Follow checklists for activities, where available • Keep the work area to specified

Activities	Nominal Duration	Contents	Methods
Sessions	20min	Recapitulation	Question & Answer
	60min	Procedures.	discussion
	60 min	Checklists for activities	Demonstration
	180min	Keep the work area to specified standard	Lecture-discussion
Evaluation	50 min	Accomplishment of LAP Test	Individual Activity
Summary	10 min	Wrap-up and Feedback	Question & Answer
Resources	<ul style="list-style-type: none"> • Learning Guide #5 • Sample job specifications 		

Session Plan-6 (M01-LO6)

Unit of Competence	Apply 5S Procedures
Module Title	Applying 5S Procedures
LO6	Sustain 5S system
Session Objectives	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Clean up after completion of job and before commencing next job or end of shift • Identify situations where compliance to standards is unlikely and take actions specified in procedures • Inspect work area regularly for compliance to specified standard • Recommend improvements to lift the level of compliance in the workplace

Activities	Nominal Duration	Contents	Methods
Sessions	10min	Recapitulation	Discussion
	1:30 min	Clean after completion of job	Demonstration
	60 min	Clean before commencing next job	Demonstration
	120 min	Identify situations as standards.	discussion and Demonstration
	60 min	Take actions specified in procedures	Discussion

	180 min	Inspect work area regularly	Discussion
	120 min	Recommend improvements of compliance	Discussion
Evaluation	90 min	written	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	<ul style="list-style-type: none"> • Learning Guide #6 • Sample site plan and drawings 		

Session Plan-7 (M02- LO1)

Unit of Competence	Receive and Responding to Workplace Communication		
Module Title	Receiving and Responding to Workplace Communication		
LO1	Follow routine spoken messages		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Clean up after completion of job and before commencing next job or end of shift • Identify situations where compliance to standards is unlikely and take actions specified in procedures • Inspect work area regularly for compliance to specified standard • Recommend improvements to lift the level of compliance in the workplace 		
Activities	Nominal Duration	Contents	Methods
Sessions	30 min	Introduction	Discussion
	90 min	Gather and interpreting information	Lecture-discussion
	120 min	Record instruction	Lecture-discussion
	180 min	Respond to instructions	Lecture-discussion and Demonstration
	60 min	Seek clarification	Lecture-discussion
Evaluation	60 min	Accomplishment of LAP Test	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	<ul style="list-style-type: none"> • Learning Guide #1 • Sample materials 		

Session Plan-8 (M02-LO2)

Unit of Competence	Receive and Responding to Workplace Communication		
Module Title	Receiving and Responding to Workplace Communication		
LO2	Perform workplace duties following written notices		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Interpret Written notices and instructions are read and correctly in accordance with organizational guidelines • Follow Routine written instruction are in sequence • give Feedback to workplace supervisor based on the instructions/information received 		
Activities	Nominal Duration	Contents	Methods
Sessions	30 min	Introduction	Lecture
	120 min	Reade and interpreting notices	Lecture-discussion
	180 min	written instruction	discussion
	150 min	feedback	Lecture-discussion and Demonstration
Evaluation	60 min	Written	Question & Answer
Summary	60 min	Wrap-up and Feedback	Individual Activity
Resources	<ul style="list-style-type: none"> • TTLM • Learning Guide #2 • Sample materials 		

Session P-Ian-9 (M03-LO1)

Unit of Competence	Work with Others
Module Title	Working with Others
LO1	Develop effective workplace relationship
Session Objectives:	At the end of this session the trainees shall be able to –

- done **Duties and responsibilities** in a positive manner to promote cooperation and good relationship
- Assistance sought from **workgroup** when difficulties arise and addressed through discussions
- Provide **Feedback** by others in the team is encouraged, acknowledged and acted upon
- Respect Differences in personal values and beliefs and acknowledged in the development

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120 min	duties & responsibilities of positively	Lecture-discussion
	60 min	Seek assistance from workgroup	discussion
	120 min	Address difficulties through discussion	Lecture-discussion
	120 min	Types of feedback on performance	Question & Answer
	60 min	Encouragement , acknowledging and acting upon	Individual Activity
Evaluation	45 min	Written interview	Individual Activity
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #01 Sample materials		

Session Plan-10 (M03-LO2)

Unit of Competence	Work with Others		
Module Title	Working with Others		
LO2	Contribute to work group activities		
Session Objectives	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> made provided Support to team members to ensure workgroup goals are met Constructive contributions to workgroup goals and tasks according to organizational requirements share Information relevant to work with team members to ensure designated goals are met 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Definition of a Work group	Lecture-discussion
	120 min	Techniques of providing support to team members	discussion
	180 min	Organizational requirements	Lecture-discussion
	140 min	Make Constructive contributions to workgroup goals and task	Lecture-discussion
Evaluation	40 min	Activity	group
Summary	60 min	Wrap-up and Feedback	Question Answer
Resources	Learning Guide #02 <ul style="list-style-type: none"> Sample materials 		

Session Plan-11 (M04-LO1)

Unit of Competence	Demonstrate Work Values
Module Title	Demonstrating Work Values
LO1	Define the purpose of work
Session Objectives:	At the end of this session the trainees shall be able to –

- One's unique sense of purpose for working and the 'whys' of work are identified, reflected on and clearly defined for one's development as a person and as a member of society
- Personal mission is in harmony with company's values

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120	purpose of work	Lecture-discussion
	60 min	company values	discussion
Evaluation	45 min	Written interview	Individual Activity
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #01 Sample materials		

Session Plan-12 (M03-LO2)

Unit of Competence	Demonstrate Work Values		
Module Title	Demonstrating Work Values		
LO2	Apply work values/ethics		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Classify Work values/ethics/concepts and reaffirmed in accordance with the transparent company ethical standards, policies and guidelines. • undertake Work practices in compliance with industry work ethical standards, organizational policy and guidelines • Conduct Personal behavior and relationships with co-workers and/or clients in accordance with ethical standards, policy and guidelines. • Use Company resources in accordance with transparent company ethical standard, policies and guidelines. 		
Activities	Nominal Duration	Contents	Methods
	15min	Recapitulation	Lecture

Sessions	180 min	Classification of work values, ethics and concepts	Lecture-discussion
	145 min	Under take work practices	discussion
	120 min	company resources	Lecture-discussion
Evaluation	45 min	Written interview	Individual Activity
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	TTLM Learning Guide #02 Sample materials		

Session Plan-13 (M04-LO3)

Unit of Competence	Demonstrate Work Values
Module Title	Demonstrating Work Values
LO3	Deal with ethical problems
Session Objectives:	At the end of this session the trainees shall be able to –

- Access Company ethical standards, organizational policy and guidelines on the prevention and reporting of unethical conduct and applied in accordance with transparent company ethical standard, policies and guidelines.
- Reported Work **incidents/situations** and/or resolved in accordance with company protocol/guidelines.
- Resolution and/or referral of ethical problems identified are used as learning opportunities.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Prevent and reporting unethical conduct	Lecture-discussion
	60 min	Reports/resolve work incidents/situations	discussion
	60 min	Using resolution and referral of ethical problem	Lecture-discussion
Evaluation	60 min	Written interview	Individual Activity

Summary	45min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #03 Sample materials		

Session Plan-14 (M04-LO4)

Unit of Competence	Demonstrate Work Values
Module Title	Demonstrating Work Values
LO4	Maintain integrity of conduct in the workplace
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Demonstrate Personal work practices and values consistently with acceptable ethical conduct and company's core values. • Provide Instructions to co-workers based on ethical, lawful and reasonable directives. • Share Company values/practices with co-workers using appropriate behavior and language.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Demonstrate personal work practices and values	Demonstration
	120 min	Instructions to co-workers	discussion
	180 min	Share company values/practices	Lecture-discussion
Evaluation	45 min	Written interview	Individual Activity
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #04 Sample materials		

Session Plan-15 (M05-LO1)

Unit of Competence	Develop e Understanding of Entrepreneurship
Module Title	Developing Understanding of Entrepreneurship
LO1	Describe and explain the principles, concept and scope of entrepreneurship

Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • analyze The principles, concept and terminology of entrepreneurship and discussed • identify The different / various forms of enterprises in the community and their roles understood • categorize The identified enterprises and classified • identify terms and elements involved in the concept of enterprising, both on a personal level and in the context of being enterprising in business and interpreted • explain Functions of entrepreneurship in business and how the entrepreneurs improved business and economic environment

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120 min	Entrepreneurship Principles, and terminology	Lecture-discussion
	60min	categorizing enterprise	discussion
	60 min	Interpret Concept of enterprising	Lecture-discussion
	120 min	Functions of entrepreneurship	Lecture-discussion
	60 min	Improve business and economic environment	Lecture-discussion
Evaluation	45 min	Written / interview	Individual Activity
Summary	60 min	Discussion	Lecture-discussion
Resources	Learning Guide #01		

Session Plan-16 (M05-LO2)

Unit of Competence	Develop e Understanding of Entrepreneurship
Module Title	Developing Understanding of Entrepreneurship
LO2	Discuss how to become entrepreneur
Session Objectives:	At the end of this session the trainees shall be able to –

- discuss Self-employment as an alternative option for an individual economic independence and personal growth and analyzed
- Discuss Advantages and disadvantages of self-employment and explained
- Identify Entrepreneurial characteristics and traits and discussed
- assess Self-potential to determine if qualified to become future entrepreneur
- identify Major competences of successful entrepreneurship and explained

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	180 min	disadvantages of Self employment	Lecture-discussion
	120 min	Entrepreneurial characteristics and traits	Discussion
	120 min	Assessing self potential	Lecture-discussion
	240 min	Identify competencies of successful entrepreneur	Question & Answer
Evaluation	45 min	Written interview	Individual Activity
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #02 Sample materials		

Session Plan-17 (M05-LO3)

Unit of Competence	Develop e Understanding of Entrepreneurship
Module Title	Developing Understanding of Entrepreneurship
LO3	: Discuss how to organize an enterprise
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • discuss The importance and role of business entrepreneurship in the society and correlated to the operations of the economy • Discuss Facts about small and medium enterprises, clarified and understood • identify Key success factor in setting up small and medium business and explained

- identify Business opportunities and assessed
- Generate Business ideas using appropriate tools, techniques and steps
 - Discuss Procedures for identifying suitable market for business and understood
 - Identify **Major factors** to consider in selecting a location for a business and discussed
 - Identify Basic types of business ownership and explained
 - Estimate Amount of money needed to start an enterprise and distinction between pre operations and initial operation payments clarified
 - Identify Advantages and disadvantages of using various sources of capital to start an enterprise

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Question & Answer
	60 min	Correlating role of business to the economy	Lecture-discussion
	60 min	Small and Medium Enterprises (SME)	discussion
	60 min	Key success factors in setting up SME	Lecture-discussion
	60 min	Identify business opportunities	Lecture-discussion
	60 min	Generate business idea	Individual Activity
	60 min	Selecting location for business	Lecture -discussion
	60 min	Types of business ownership	discussion
	60 min	Pre operations and initial operation of business	demonstration
Evaluation	45min	Written interview	Individual Activity
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #03 Sample materials		

Session Plan-18 (M05-LO4)

Unit of Competence	Develop e Understanding of Entrepreneurship
Module Title	Developing Understanding of Entrepreneurship
LO4	Discuss how to operate an enterprise
Session Objectives:	At the end of this session the trainees shall be able to –

- Identify Disadvantages and advantages of **three alternative** means of becoming an entrepreneur and understood
- discuss Process of hiring and managing people and explained
discuss The importance and techniques of managing time and understood
 - discuss The techniques and procedures of managing sales and explained
 - identify Factors to consider in selecting suppliers and the steps to follow when doing business with them and discussed
 - Develop Awareness of how new technologies can affect small and medium business
 - identify Characteristics of appropriate technology for use in small and medium business and explained
 - discussed Different types of cost that occur in a business and how to manage them and understood
 - discuss Factors and procedures in knowing the cost of the enterprise and understood
 - explain Importance of financial record keeping and preparing simple financial statement and understood
 - discuss The application of self-management skills and negotiation skills in operating a business
 - Risk assessment and management of business enterprise are performed

Activities	Nominal Duration	Contents	Methods
Sessions	10min	I Recapitulation	Lecture
	30min	Disadvantage and advantages of three alternative	Lecture-discussion
	60 min	Hire and managing people	discussion
	30min	Time management	Lecture-discussion
	50min	Managing sales	Question & Answer

	60 min	dealing with suppliers	Individual Activity
	30min	threats and opportunities of business	Lecture-discussion
	60 min	simple financial statement	Lecture-discussion
	30min	Self management skills	Lecture-discussion
	60 min	Negotiation skills	Lecture-discussion
	60 min	Risk management	Lecture-discussion
Evaluation	45 min	Written interview	Individual Activity
Summary	15min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #04 Sample materials		

Session Plan-19 (M05-LO5)

Unit of Competence	Develop e Understanding of Entrepreneurship
Module Title	Developing Understanding of Entrepreneurship
LO5	Discuss how to operate an enterprise
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Discuss Process of preparing/ writing a business plan and applied • apply Standard structure and format in preparing business plan • interpret Findings of the business plan, assessed and analyzed • make Feasibility of the business idea clear and understandable • identify Problems that may arise or encounter when starting a business and understand • Discuss Techniques and procedures in obtaining and sourcing information and understood

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	60 min	Write business plan	Discussion-demonstration
	60 min	identify potential problems	discussion
	60 min	Obtain and sourcing information	Lecture-discussion
Evaluation	45 min	Written interview	Individual
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #05 Sample materials		

Session Plan-20 (M06-LO1)

Unit of Competence	Apply Quality Standards
Module Title	Applying Quality Standards
LO1	Assess own work
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Check Completed work against workplace standards relevant to the operations being undertaken • Demonstrate An understanding on how the work activities and completed work relate to the next construction process and to the final appearance of the construction • identify Faulty pieces or final construction and isolated in accordance with company policies and procedures <p>record Faults and any identified causes and reported in accordance with workplace procedures</p>

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	60 min	Sequencing of work process	Lecture-discussion
	120 min	Identify & isolating faulty pieces	discussion
	60 min	Record & reporting faulty causes	individual-discussion

Evaluation	45 min	Written and activity	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question& answers
Resources	Learning Guide #01 Sample materials		

Session Plan-21 (M06-LO2)

Unit of Competence	
Module Title	
LO2	Assessing quality received articles
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Check Received materials, articles, component parts or final construction against workplace standards and specifications for such things as size, color, fabric, alignment and finish • Measure Materials, articles or constructions using the appropriate measuring instruments in accordance with workplace procedures • Demonstrate An understanding of how the received materials or component parts relate to the current operation and how they contribute to the final appearance of the construction • Identify Faulty material or component parts related to the operator's work and isolated • Record Where required, the faults and any identified causes and/or reported to the supervisor concerned in accordance with workplace procedures • Take Causes of any identified faults are identified and corrective actions in accordance with workplace procedures

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	1hrs	quality standards & specifications	Lecture-discussion
	1hrs	Measure materials, articles & constructions	discussion

	1hrs	Sequence of work process	Lecture-discussion
	1hrs	Identify and isolating faulty materials	demonstration
Evaluation	45	Written	Individual
Summary	1hrs	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #02 Sample materials		

Session Plan-22 (M06-LO3)

Unit of Competence	Apply Quality Standards
Module Title	Applying Quality Standards
LO3	Record Information
Session Objectives:	At the end of this session the trainees shall be able to –

- Measure Materials, component parts or constructions, as required, using the appropriate measuring instruments in accordance with workplace procedures
- record Basic information on the quality performance in accordance with workplace procedures
- Maintain Records of work quality according to the requirements of the company

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Measure materials and component parts	demonstration
	60 min	Record quality performance	discussion
	60 min	Maintain & records of work quality	Lecture-discussion
Evaluation	45 min	Written & activity	Individual
Summary	60 min	Wrap-up and Feedback	Question& answers
Resources	Learning Guide #03 Sample materials		

Session Plan-23 (M06-LO4)

Unit of Competence	Apply Quality Standards		
Module Title	Applying Quality Standards		
LO4	Study causes of quality deviations		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Investigate Causes of deviations from specified final construction quality standards for materials, component parts or final construction and reported, as required, using the appropriate measuring techniques in accordance with workplace procedures • Recommend Suitable preventive action based on workplace quality standards and identified causes of deviation from specified quality standards and parameters of materials or final construction 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	causes of deviations	Lecture-discussion
	60 min	Suitable preventive action	discussion
	2hrs	quality standards parameters of materials	Lecture-discussion
Evaluation	45	Written interview	Individual
Summary	1hrs	Wrap-up and Feedback	Question& answers
Resources	Learning Guide #04 Sample materials		

Session Plan-24 (M06-LO5)

Unit of Competence	Apply Quality Standards		
Module Title	Applying Quality Standards		
LO5	Completing documentation		
Session Objectives:	At the end of this session the trainees shall be able to –		

- Record **Information** on quality and other indicators of construction performance.
- Record .All construction processes and outcomes

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Record information on quality	Lecture-discussion
	60 min	Record processes & outcomes	discussion
Evaluation	45 min	Written	Individual Activity
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	TTLM Learning Guide 5 Sample materials		

Session Plan-25 (M07-LO1)

Unit of Competence	: Carry out Measurements and Simple Calculations
Module Title	: Carrying out Measurements and Simple Calculations
LO1	Select measuring instruments
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • identify Object or component to be measured, classified and interpreted according to the appropriate regular geometric shape • select Measuring tools /identified as per object to be measured or job requirements • obtain Correct specifications from relevant sources • Appropriate measuring instruments according to job requirements • Use Alternative measuring tools without sacrificing cost and quality of work

Activities	Nominal Duration	Contents	Methods
Sessions	30min	Introduction	Lecture
	240 min	Identify object or component to be measured	Lecture-discussion
	300 min	Classify and interpreting geometric shape	discussion

	36 min	Select measuring instruments	Lecture-discussion
	300 min	Obtain correct specifications	Question & Answer
	120 min	alternative measuring instruments	Individual Activity
Evaluation	90 min	Written interview	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question& answers
Resources	Learning Guide #01 Sample materials		

Session Plan-26 (M07-LO2)

Unit of Competence	: Carry out Measurements and Simple Calculations		
Module Title	: Carrying out Measurements and Simple Calculations		
LO2	Carry out measurements and calculations		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Accurate measurements and calculation according to job requirements • used Alternative measuring tools without sacrificing cost and quality of work • Calculation needed to complete work tasks using the four basic process of addition (+), subtraction (-), multiplication (x) and division (/) including but not limited to: trigonometric functions, algebraic computations • use Calculations involving fractions, percentages and mixed numbers to complete workplace tasks • Numerical computation is self-checked and corrected for accuracy • Instruments are read to the limit of accuracy of the tool • Systems of measurement identified and converted according to job requirements/ISO • Measure Work pieces according to job requirements 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	300 min	Perform calculations	Lecture-discussion
	300 min	trigonometric functions	discussion

	300 min	algebraic computations	Lecture-discussion
	300 min	fractions	Question & Answer
	300 min	percentages	Individual Activity
	300 min	mixed numbers	Lecture- discussion
	300 min	Check numerical computation	Lecture- discussion
	300 min	Read instruments	Lecture- discussion
	300 min	Unit conversion Measuring work pieces	Lecture- discussion
Evaluation	120 min	Written	Individual calculate
Summary	45min	Wrap-up and Feedback	Question& answers
Resources	Learning Guide #02 Sample materials		

Session Plan-27 (M08-LO1)

Unit of Competence	Use Construction Hand and Power Tools		
Module Title	Using Construction Hand and Power Tools		
LO1	. Identify hand and power tools		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • adhere OH&S requirements associated with the use of construction hand and power tools, and the workplace environment to throughout the work • identify Quality assurance requirements for company operations and adhered to • Identify Types of hand and power tools and their functions • Recognize Power source(s), and access to power supply 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	60 min	OH&S requirements	Lecture-discussion
	60 min	Quality assurance requirements	Lecture discussion
	120 min	Types and functions of hand and	discussion

		power tools	
	120 min	Recognize access to power supply	Lecture-discussion
Evaluation	45 min	Written interview	Individual demonstration
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #01 Sample materials		

Session Plan-28 (M08-LO2)

Unit of Competence	Use Construction Hand and Power Tools		
Module Title	Using Construction Hand and Power Tools		
LO2	Select appropriate hand tools		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Select Hand tools consistent with the needs of the job • Check Hand tools for serviceability and safety and any faults reported to supervisor in accordance with workplace requirements • Select Equipment to hold, position or support material for hand tools application 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Select appropriate hand tools	Lecture-discussion
	60 min	Check serviceability of hand tools	discussion
	120 min	Apply safety	Lecture-discussion
Evaluation	45 min	Written & lab	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #02 Sample materials		

Session Plan-29 (M08-LO3)

Unit of Competence	Use Construction Hand and Power Tools		
Module Title	Using Construction Hand and Power Tools		
LO3	appropriate hand tools		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Material is located and held in position for hand tool application • safely Hand tools and effectively used according to their intended use • locate Hand tools safely when not in immediate use 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Position material for hand tool application	Lecture-discussion
	60 min	Use hand tools	discussion
	2120 min	Store hand tools	Lecture-discussion
Evaluation	45 min	Written interview	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #03 Sample materials		

Session Plan-30 (M08-LO4)

Unit of Competence	Use Construction Hand and Power Tools		
Module Title	Using Construction Hand and Power Tools		
LO4	Select appropriate power tools		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • select Appropriate personal protective equipment, correctly fitted and used • select Power tools consistent with the needs of the job in accordance with conventional work practice • visually check Power tools for tags, serviceability/safety in accordance with OH&S requirements and any faults reported to supervisor in accordance with enterprise procedures 		

- select Equipment to hold, position or support materials for power tool application

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Personal protective equipment	Lecture-discussion
	60 min	Select power tools and equipment Select equipment to support materials	discussion
	120 min	Positioning materials	Lecture-discussion
Evaluation	45 min	Written	Individual
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	TTLM Learning Guide #04 Sample materials		

Session Plan-31 (M08-LO5)

Unit of Competence	Use Construction Hand and Power Tools		
Module Title	Using Construction Hand and Power Tools		
LO5	Use appropriate power tools		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Material is located and held in position for power tool application • Power tools are safely and effectively used in application processes • safely switched Power tools and located when not in use 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	2hrs	Position material for power tool application	Lecture-discussion
	1hrs	Power tools application processes	discussion

	3hrs	Proper use of Power tool	Lecture-discussion
Evaluation	45	Written	Individual
Summary	1hrs	Wrap-up and Feedback	Question & Answer
Resources	TTLM Learning Guide #05 Sample materials		

Session Plan-32 (M08-LO6)

Unit of Competence	Use Construction Hand and Power Tools
Module Title	Using Construction Hand and Power Tools
LO1 6	Cleanup work area and tools
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • clear Work area in accordance with workplace procedures • Clean Tools and equipment, checked, maintained and stored in accordance with manufacturers' recommendations and workplace procedures • completed Documentation in accordance with workplace requirements

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120 min	Maintain tools and equipment	discussion
	60 min	Perform good housekeeping	discussion
Evaluation	45 min	clean	group
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #06 Sample materials		

Session Plan-33 (M09-LO1)

Unit of Competence	Read and Interpreting Plans and Working Drawing
Module Title	Reading and Interpreting Plans and Working Drawing
LO1	Identify types of drawings and their purposes
Session Objectives:	At the end of this session the trainees shall be able to –

Identify The purpose and advantage of different **types of drawing**.

- Identify Different **aspects of drawings**.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	240 min	types of drawings	Lecture-discussion
	240 min	Purpose and advantages of drawings	discussion
	180 min	Aspects of drawing	Lecture-discussion
Evaluation	95 min	Written & lab	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #01 Sample materials		

Session Plan-34 (M09-LO2)

Unit of Competence	Read and Interpreting Plans and Working Drawing		
Module Title	Reading and Interpreting Plans and Working Drawing		
LO2	Applying commonly used symbols and abbreviations		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Identify commonly used symbols and abbreviations on drawings, understood and applied. • Identify Common building and construction terms used on drawings, understood and applied. 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	240 min	symbols and abbreviations	Lecture-discussion
	360 min	building construction terminologies	discussion
Evaluation	165 min	Class activity	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #02		

	Sample materials
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Session Plan-35 (M9-LO3)

Unit of Competence	Read and Interpreting Plans and Working Drawing
Module Title	Reading and Interpreting Plans and Working Drawing
LO3	Locate and identify key features on a site plan
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> Identify the building site from location drawings. Identify true north and building orientation from details provided on the site plan. Identify the key features of the site plan.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	180 min	Identify building site	Lecture-discussion
	240 min	true north and building orientation	Lecture discussion
	240 min	key features of the site plan	Lecture-discussion
Evaluation	95 min	Written	Individual
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #03 Sample materials		

Session Plan-36 (M09-LO4)

Unit of Competence	Read and Interpreting Plans and Working Drawing
Module Title	Reading and Interpreting Plans and Working Drawing
LO4	Identify and locate key features on drawings
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> Identify the key features of plans, elevations and sections. Identify Client requested variations to standard plans on drawings.

Activities	Nominal Duration	Contents	Methods
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Sessions	15min	Recapitulation	Lecture
	300 min	key features of plans	Lecture-discussion
	360 min	elevations and sections	discussion
Evaluation	95 min	Written	Individual
Summary	60 min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #04 Sample materials		

Session Plan-37 (M09-LO5)

Unit of Competence	Read and Interpreting Plans and Working Drawing
Module Title	Reading and Interpreting Plans and Working Drawing
LO5	Reading and interpreting specifications
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> Identify Customer variations to standard specifications Apply Correct interpretations of essential elements to estimation, planning and supervisory tasks and communicated. Identify Building codes or standards affecting the work to be undertaken, including references to Ethiopian standards and the Building Code of Ethiopia.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	240 min	customer variations and standard specifications	Lecture-discussion
	180 min	Interpret essential elements	discussion
	240 min	Estimate planning and supervising task	Lecture-discussion
	120 min	Identify & undertaking building codes of Ethiopia	Lecture-discussion
Evaluation	45 min	Written	Individual Activity
Summary	60 min	Wrap-up and Feedback	Question & Answer

Resources	Learning Guide #05 Sample materials
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Session Plan-38 (M10-LO1)

Unit of Competence	Perform Bench Work
Module Title	Performing Bench Work
LO1	Layout and mark dimensions/ features on work piece
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Select Materials according to the requirements specified in the drawing. • Laid out Dimensions/features and marked in accordance with drawing specifications using <i>bench work tools and equipment.</i> • Perform Lay outing and marking are applying knowledge on safety procedures and using personal protective devices.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120min	Types and characteristics of materials	Lecture-discussion
	60min	Types and uses of tools and materials	discussion
	120min	Laying out & out and marking dimension and feature	Demonstration/ observation
	120min	Applying safety procedures and OHS	Demonstration/ observation
	60min	Conversion to metric system	Demonstration/ observation
Evaluation	45	Accomplishment of written test	Individual Activity
Summary	60min	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #01 Sample materials		

Session Plan-39 (M010-LO2)

Unit of Competence	Perform bench work
Module Title	Performing bench work
LO2	Performing necessary operation
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Cut Pipes, reamed and threaded within tolerance specified in the drawing. • use Pipe cutter properly to avoid damage and accident • Cut Rectangular or round blocks, chipped or filed within tolerance specified in the drawing. • Replace Broken or dull hacksaw blades according to requirements. • Perform Bench work operations applying knowledge on safety procedures and using personal protective devices

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120min	Cut Pipes, reamed and threaded	Lecture-discussion
	60min	Pipe cutter properly to avoid damage and accident	Demonstration/ observation
	120min	Cut Rectangular or round blocks, chipped or filed	Demonstration/ observation
	120min	Replace Broken or dull hacksaw blades	Question & Answer
	60min	Perform Bench work operations	Individual Activity
Evaluation	45min	Accomplishment of written test	Individual Activity
Summary	60 min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #2 Sample materials		

Session Plan-40 (M10-LO3)

Unit of Competence	Perform Bench work
Module Title	Performing Bench work
LO3	Drill and lap holes
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Drill Hole, reamed, spot-faced and lapped to drawing specification. • Perform Drilling, reaming or lapping holes according to recommended sequence. • Perform Operations applying knowledge on safety procedures and using personal protective devices

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120min	Drill Hole, reamed, spot-faced and lapped	Lecture-discussion
	60min	Performing drilling, reaming, spot-facing and lapping hole	discussion
	120min	Applying safety procedures	Lecture-discussion
	120min	Accomplishment of practical test	Demonstration/observation
	60min	Accomplishment of written test	Individual Activity
Evaluation	45 min	Written interview	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #3 Sample materials		

Session Plan-41 (M10-LO4)

Unit of Competence	Perform bench work
Module Title	Performing bench work
LO 4	Bend PVC/ Metal Conduit
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Select Type of conduit according to requirement specified in the drawing • Perform Uniform radius of angles with tolerable material condition • Perform Vertical and horizontal positioning of conduit on 90 degree bending according to given tolerance • Conduit bending is performed applying knowledge on 5'S safety procedure and the use of PPE • Perform Operations applying knowledge on safety procedures and using personal protective devices.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120min	selecting Type of conduit	Demonstration/observation
	60min	performing Uniform radius of angles	Demonstration/observation
	120min	Vertical and horizontal positioning of conduit on 90 degree	Lecture-discussion
	60min	Conduit bending is performed	Individual /group
Evaluation	45min	Accomplishment of written test	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #04 Sample materials		

Session Plan-42 (M10-LO5)

Unit of Competence	Perform bench work
Module Title	Performing bench work
LO5	Off –set PVC/Metal conduit
Session Objectives:	At the end of this session the trainees shall be able to –

- Select Materials according to requirement specified in the drawing
- perform Conduit off-setting within tolerable material condition applying knowledge on 5’S, safety procedure and the use of PPE
- perform Uniform off-set according to requirement specified in the drawing

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120min	Selecting Materials according to drawing	Demonstration/observation
	60min	Performing Conduit off- set.	discussion
	120min	Applying safety procedure and the use of PPE	Lecture-discussion
	120min	Performing uniform off-set	Question & Answer
	60min	Accomplishment of practical test	Individual /group
Evaluation	45min	Accomplishment of written test	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #5 Sample materials		

Session Plan-43 (M10-LO6)

Unit of Competence	Perform bench work
Module Title	Performing bench work
LO6	Splice wires and joining
Session Objectives:	At the end of this session the trainees shall be able to –

- Perform Splicing and joining according to the type of conductors specified in the drawing
- Correct splicing, joining is performed according to industry standard
- Perform Wire splicing and joining without damage on the wire , applying knowledge

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	60min	Performing Splicing and joining	Demonstration/observation
	60min	Specifying type of conductors in the drawing	discussion
	120min	Correcting splicing and joining standard	Demonstration/observation
	120min	Performing Wire splicing and joining is without damage	Demonstration/observation
	60min	Applying knowledge on 5'S	Demonstration/observation
	60min	procedure and use of PPE	Demonstration/observation
Evaluation	45min	Written interview	
	60min	Accomplishment of practical test	Individual/group
	15min	Accomplishment of written test	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #6 Sample materials		

Session Plan-44 (M11-LO1)

Unit of Competence	Prepare Surfaces for Construction Work
Module Title	Preparing Surfaces for Construction Work
LO1	. Plan and prepare
Session Objectives:	At the end of this session the trainees shall be able to –

- Obtain Work instructions, including plans, specifications, and quality requirements.
- Follow Occupational Health & Safety (OH&S) in accordance with safety plans and policies
- Identify Signage/barricade requirements and implemented
- consistent Plant, tools and equipment selected to carry out tasks with the requirements of the
- Rectify/, check job for serviceability and any faults or reported prior to commencement
- Calculate Material quantity requirements in accordance with plans and/or specifications
- Identify Materials appropriate to the work application, obtained, prepared.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	60min	interpreting Plan/working drawing	Lecture-discussion
	60min	Interpreting specification	Discussion
	60min	Identifying and applying necessary requirements	Lecture-discussion
	60min	Types, characteristics and uses of materials, tools and equipment	Lecture-discussion
	60min	Calculating materials quantity requirements	Lecture-discussion
	60min	Types of Trade mathematics	Lecture-discussion
Evaluation	45 min	Written interview	Individual Activity
Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #1 Sample materials		

Session Plan-45 (M11-LO2)

Unit of Competence	Prepare Surfaces for Construction Work
Module Title	Preparing Surfaces for Construction Work
LO2	Prepare materials for tiling application
Session Objectives:	At the end of this session the trainees shall be able to –

- Check Floor and wall tiling materials for product suitability, conformity to specification and compatibility with surface material, preparation and installation technique
- Identify Activities for material preparation from specifications, manufacturers' or supervisor's instructions
- Carry Material preparation out to satisfy the requirements of the application process

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120min	Checking suitability of floor and wall tiling materials	Lecture-discussion
	60min	Preparing materials	Discussion
	120min	Aspects of drawing	Lecture-discussion
Evaluation	45min	Written interview	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #2 Sample materials		

Session Plan-46 (M11-LO3)

Unit of Competence	Prepare Surfaces for Construction Work
Module Title	Preparing Surfaces for Construction Work
LO3	Prepare surface
Session Objectives:	At the end of this session the trainees shall be able to – <ul style="list-style-type: none"> • identify Preparation requirements from site inspection and plans/specifications • remove Hazards, obstructions and attachments d, or arrangements made for their removal • Select Surface preparation tools and set up in accordance with surface condition and job requirements • Use Tools to prepare surface in accordance with manufacturers' specifications and job requirements • remove All loose or protruding material by sander/grinder and brush so that surface is prepared to specification

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	Preparation requirements	
	60min	Removing hazards, obstructions and attachments	Demonstration/observation
	60min	Selecting surface preparation tools	Demonstration/observation
	120min	Preparing surface	Demonstration/observation
	60min	sanding/grinding/brushing surfaces	Demonstration/observation
Evaluation	30min	Written interview	Individual Activity
Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #3 Sample materials		

Session Plan-47 (M11- LO4)

Unit of Competence	Prepare Surfaces for Construction Work		
Module Title	Preparing Surfaces for Construction Work		
LO4	Prepare underlay and sheeting substrate		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • provided Assistance with underlay preparation under instructions and supervision • finish Substrate surface to approved surface standards with joints flush and sealed • prepare underlay and sheeting substrate 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	300min	Finishing Substrate surface	Demonstration/observation
	120min	Preparing sealed underlay and sheeting substrate	Demonstration/observation
Evaluation	45min	Written interview	Individual Activity

Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #4 Sample materials		

Session Plan-48(M11-LO5)

Unit of Competence	Prepare Surfaces for Construction Work
Module Title	Preparing Surfaces for Construction Work
LO5	Preparing render substrate surface
Session Objectives:	At the end of this session the trainees shall be able to –

- safely detached, removed or arranged for removal from area and stored
- identify **Substrate structure** and surfaces are cleaned to remove all contaminants and loose material in accordance with supervisor's instructions
- proportion Materials for splash coat and mixed to instructions ready for application to wet surface
 - Prepare Horizontal/vertical surrounds for tiling process in accordance with type of tile and specified finish
 - Proportion Materials for render coat and mixed to instructions ready for application
- Scratch Surface, rendered, cured and dried to instructions in accordance with specifications for tile application

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	Removing surface mounted construction units and attachments	Demonstration/observation
	30min	Identifying substrate structure	Demonstration/observation
	30min	Removing contaminants and loose material	Demonstration/observation
	120min	Mixing materials for splash coat are proportioned	Demonstration/observation
	60min	Preparing horizontal/vertical surrounds	Demonstration/observation

	60min	Types of tile and specified finish	Demonstration/observation
	60min	Mixing materials for render coat	Demonstration/observation
	60min	Scratching, rendering, curing and drying surface	Demonstration/observation
Evaluation	Min45	Written interview	Individual Activity
Summary	15min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #5 Sample materials		

Session Plan-49 (M11-LO6)

Unit of Competence	Prepare Surfaces for Construction Work		
Module Title	Preparing Surfaces for Construction Work		
LO6	Patch & fill holes and depressions		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Determine Patching method of hole from type of material surface, size of hole, compatibility of materials and planned finish • Select Patching materials to suit material surface and mixed to manufacturers 'specifications • Apply Material to manufacturers' specifications using appropriate application method • brush/wash/scrap Surface clean of surplus material in accordance with type of patching material and material surface • seal Patched areas by application of prime or sealing coat, to suit requirements of specified finishes 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	Determining patching method of hole	Demonstration/observation
	60	selecting patching materials	Demonstration/observation
	60min	Application methods	Demonstration/observation
	120min	Brushing, washing and scraping surface	Demonstration/observation

	180min	Type of patching material and material surface	Demonstration/observation
	60min	Applying prime or sealing coat	Demonstration/observation
Evaluation	45min	Written interview	Individual Activity
Summary	15min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #6 Sample materials		

Session Plan-50 (M11-LO7)

Unit of Competence	Prepare Surfaces for Construction Work		
Module Title	Preparing Surfaces for Construction Work		
LO 7	Clean up		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<p>clear Work area and materials disposed of, reused or recycled in accordance with legislation/regulations/ codes of practice and job specification</p> <ul style="list-style-type: none"> • clean, check, maintain Plant, tools and equipment and stored in accordance with manufacturers' recommendations and standard work practices 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120min	Recycling and disposing waste materials	observation
	60min	Maintaining tools and equipment	observation
	45min	Performing good housekeeping	demonstration
Evaluation	30min	Written interview	Individual Activity
Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #7 Sample materials		

Session Plan-51 (M12-LO1)

Unit of Competence	Setting-out vertical/ horizontal line
Module Title	Setting-out vertical/ horizontal line
LO1	Plan and prepare
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Obtain Work instructions, including plans, specifications, quality requirements and operational details, confirmed and applied. • Follow Safety requirements in accordance with safety plans and policies. • Consistent Tools and equipment selected to carry out tasks with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement. • Calculate Material quantity requirements in accordance with plans and/or specifications. • Identify Materials appropriate to the work application d, obtained, prepared, safely handled and made ready for use. • Identify Environmental protection requirements for the project.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	30min	Interpreting Plan/working drawing	Lecture- discussion
	45min	Identify and apply necessary requirements	Lecture- discussion
	30min	Safety requirements	Lecture- discussion
Evaluation	60Min	Regulatory requirements	Lecture- discussion
	180Min	Environmental protection	Lecture- discussion
	120 Min	Types, characteristics and uses of materials, tools and equipment	Demonstration/observation
	390Min	Calculating materials quantity requirements	Lecture- discussion
	105Min	Types of Trade mathematics	Lecture- discussion
Summary	15min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #1 Sample materials		

Session Plan-52 (M12-LO2)

Unit of Competence	Set-out vertical/ horizontal line
Module Title	Setting-out vertical/ horizontal line
LO2	Identifying & Indicating site boundaries
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Locate Survey pegs at corners of site and identified in accordance with job drawings and specifications. • String lines are set accurately into position to identify boundaries of site in accordance with site plan and survey pegs

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	180min	Locating survey pages for site plan	demonstration
	300min	identifying survey pages for site plan	Demonstration/observation
	120min	Identifying boundaries	Demonstration/observation
	120min	Setting string lines	Demonstration/observation
Evaluation	45min	Written interview	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #2 Sample materials		

Session Plan-53 (M12-LO3)

Unit of Competence	Set-out vertical/ horizontal line
Module Title	Setting-out vertical/ horizontal line
LO3	Set out right angled corners
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Corner of building is determined on set building line to true measurement from adjacent boundary and marked with peg in accordance with job drawings and specifications. • Set up Right angle to line from corner peg using triangulation principles. • Install Hurdles/profiles to approximate level of

other hurdles and line set taut to right angled alignment.

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	300min	Determining corner of building	Demonstration/observation
	300min	Setting up right angle	Demonstration/observation
	180min	Applying triangulation principle	Demonstration/observation
	420min	Installing hurdles/profiles	Demonstration/observation
	120min	Setting line to right angled alignment	Demonstration/observation
Evaluation	60min	Written interview	Individual Activity
Summary	45min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #3 Sample materials		

Session Plan-54 (M12-LO4)

Unit of Competence	Set-out vertical/ horizontal line
Module Title	Setting-out vertical/ horizontal line
LO4	Building lines are checked for squareness
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Check Diagonal measurements for square and lines adjusted to provide square relationship within 5 mm tolerance over minimum diagonal length of 15m. • Measurements are checked for accuracy

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	360min	Checking diagonal measurements for squareness	Demonstration/observation
	360min	Adjusting line to provide square	Demonstration/observation

		relationship	
	360min	Checking measurements for accuracy	Demonstration/observation
Evaluation	45min	Written interview	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #4 Sample materials		

Session Plan-55 (M12-LO5)

Unit of Competence	Set-out vertical/ horizontal line
Module Title	Setting-out vertical/ horizontal line
LO5	Clean up
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Clear Work area and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification. • Clean Tools and equipment, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	120min	Materials disposal	observation
	300min	Maintaining tools and equipment	observation
	60min	Performing good housekeeping	observation
Evaluation	45min	Written interview	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide # 5 Sample materials		

Session Plan-56 (M13-LO1)

Unit of Competence	Perform Roughing In Activities for Communication and Distribution Systems
Module Title	Performing Roughing In Activities for Communication and Distribution Systems
LO1	Install electrical metallic conduit
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Interpret Correct drawings based on job requirements • Determine Correct quantities of metallic conduit and accessories as per job requirements • Select Tools and equipment as per job requirements • fully inserted Conduit is assembled ensuring that fittings and tightened as per job requirements • Conduit is bent with bends not exceeding 90° as per job requirements • Conduit couplings and elbows are installed as per job requirements • threaded Conduit in line with job requirements • Safety procedures are followed in line with standard operating procedures (SOPs)

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	Interpreting electrical drawings	Lecture
	120min	Determining correct quantities of metallic conduit and accessories	Lecture-discussion
	60min	Selecting tools and equipment	Demonstration/observation
		Inserting and tightening conduit	discussion
	360min	Bending conduit	demonstration
	120min	. Installing conduit couplings and elbows	demonstration
	180min	Conduit threading	Demonstration/observation
	60min	cutting required conduit length	Demonstration/observation
	60min	Following Safety procedures	Demonstration/observation
Evaluation	1:30min	Written interview	Individual Activity

Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #1 Sample materials		

Session Plan-57 (M13-LO2)

Unit of Competence	Perform Roughing In Activities for Communication and Distribution Systems
Module Title	Performing Roughing In Activities for Communication and Distribution Systems
LO 2	. Install wire ways and cable tray
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Correct drawings are interpreted to determine job requirements • Correct quantities of materials are selected as per job requirements • Tools and equipment are selected as per job requirements • Wire ways and cable trays are installed as per job requirements • Safety procedures are followed in line with SOPs

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	. Interpreting correct drawings	Lecture-discussion
	120min	Selecting quantities of materials	Lecture-discussion
	60min	Selecting tools and equipment	Demonstration/observation
	660min	. Installing Wire ways and cable trays	Demonstration/observation
	60min	Applying Safety procedures	Demonstration/observation
Evaluation	1:30min	Written interview	Individual Activity
Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #2 Sample materials		

Session Plan-58 (M13-LO3)

Unit of Competence	Perform Roughing In Activities for Communication and Distribution Systems
Module Title	Performing Roughing In Activities for Communication and Distribution Systems
LO3	. Install telephone terminal cabinet and distribution frame
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Correct drawings are interpreted to determine job requirements • Correct quantities of materials are selected as per job requirements • Tools and equipment are selected as per job requirements • Telephone terminal cabinet is installed as per job requirements • Telephone main distribution is installed as per job requirements • Safety procedures are followed during installation in line with SOPs

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	Interpreting correct drawings	
	60min	selecting quantities of materials	lecture
	60min	Selecting tools and equipment	demonstration
	300min	. Installing telephone terminal cabinet	demonstration
	300min	. Installing telephone main distribution	demonstration
	120min	Following Safety procedures	observation
Evaluation	1:30min	Written interview	Individual Activity
Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #3 Sample materials		

Session Plan-59 (M13-LO4)

Unit of Competence	Perform Roughing In Activities for Communication and Distribution Systems		
Module Title	Performing Roughing In Activities for Communication and Distribution Systems		
LO4	. Install cable bridge		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Correct drawings are interpreted based on job requirements • Correct quantities of materials are selected as per job requirements • Tools and equipment are selected as per job requirements • Cable bridge is installed as per job requirements • Safety procedures are followed in line with SOPs 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45Min	Interpreting correct drawings	Lecture
	60Min	selecting correct quantities of materials	discussion
	60Min	Selecting tools and equipment	Demonstration
	600Min	Installing cable bridge power tools	Demonstration
	60Min	Following Safety procedure	Observation
Evaluation	1:30min	Written interview	Individual Activity
Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #4 Sample materials		

Session Plan-60 (M13-LO5)

Unit of Competence	Perform Roughing In Activities for Communication and Distribution Systems		
Module Title	Performing Roughing In Activities for Communication and Distribution Systems		
LO 5	Notify completion of work		
Session Objectives:	At the end of this session the trainees shall be able to –		

- Final checks are made to ensure that work conforms with instructions and job requirements
- Supervisor is notified upon completion of work
- Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
- Work area is cleaned up and made safe according to OH&S regulations

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	Making final checks	demonstration
	300min	Notifying completion of work	demonstration
	240min	Cleaning, checking and returning tools and equipment	Observation
	60min	Cleaning work area	Observation
Evaluation	30min	Written interview	Individual Activity
Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #5 Sample materials		

Session Plan-61 (M14-LO1)

Unit of Competence	Install Wiring Systems Using PVC and Flexible Conduits
Module Title	Installing Wiring Systems Using PVC and Flexible Conduits
LO1	Plan and prepare
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Confirm The existing electrical supply in accordance with laid down procedure • Follow Agreed procedures to ensure the co-ordination of site services and the activities of other trades • identify The means of electrical isolation is accurately prior to commencing installation when required s • carried Isolation procedures out to ensure a safe installation in accordance with electrical

- regulations and approved procedures
- measure All locations and marked out for wiring systems, wiring enclosures, tools and equipment in accordance with electrical regulations and to meet an agreed specification
- check The planned locations for their sensitivity, visually acceptable and are in accordance with other site services

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	300hrs	Confirming the existing electrical supply	Lecture-discussion
	300hrs	Following agreed procedures	discussion
	360hrs	Identifying the means of electrical isolation	Lecture-discussion
	300hrs	Carrying out isolation procedures	Question & Answer
	360hrs	Applying electrical isolation regulations	Individual Activity
	360	Measuring and marking out locations	
	240	Checking the planned locations	
Evaluation	1:45	Written interview	Individual Activity
Summary	60hrs	Wrap-up and Feedback	Question & Answer
Resources	Learning Guide #1 Sample materials		

Session Plan-62 (M14-LO2)

Unit of Competence	Install Wiring Systems Using PVC and Flexible Conduits
Module Title	Installing Wiring Systems Using PVC and Flexible Conduits
LO2	Install wiring system
Session Objectives:	At the end of this session the trainees shall be able to –

- The wiring systems, using PVC and Flexible Conduits are fixed safely and in accordance with relevant regulations and manufacturers' instructions
- Test data is recorded in the format required by the job specifications and quality assurance procedures

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	300 min	Specifying principles of electrical theory	Lecture-discussion
	600 min	Fixing PVC and flexible conduits	Discussion
	240 min	Applying electrical drawings	Lecture-discussion
	1200 min	Connecting wiring system	Question & Answer
	300 min	Selecting correct test and proving instruments	Individual Activity
	300 min	Using correct test methods	discussion
	120 min	Quality assurance procedures	discussion
	60 min	Recording tested data	discussion
	120 min	Specifying IEE wiring regulations	discussion
Evaluation	1:45 min	Written interview	Individual Activity
Summary	1hrs min	Wrap-up and Feedback	Lecture-discussion
Resources	TTLM Learning Guide #2 Sample materials		

Session Plan-63 (M14-LO3)

Unit of Competence	Install Wiring Systems Using PVC and Flexible Conduits
Module Title	Installing Wiring Systems Using PVC and Flexible Conduits
LO3	LO3. Inspect and notify completion of work
Session Objectives:	At the end of this session the trainees shall be able to –

- Report is done to relevant people those necessary variations to the planned programmed of work
- The appropriate action is sought from the relevant people

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	600min	Preparing report	Lecture-discussion
	600min	Seeking appropriate action	Discussion
Evaluation	1:45min	Written interview	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	TTLM Learning Guide #3 Sample materials		

Session Plan-64 (M015-LO1)

Unit of Competence	Install Communication Cables
Module Title	Installing Communication Cables
LO1	Plan and prepare work
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Plan Installation and prepared to ensure OH&S policies and procedures are followed, the work is appropriately sequenced in accordance with requirements • Consult coordinate Appropriate personnel to ensure the work effectively with others involved on the work site • Check Components necessary for undertaking installation against job requirements • Obtain 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

- Materials necessary to complete the work are obtained in accordance with established procedures and checked against job requirements
- **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
- Preparatory work is checked to ensure no unnecessary damage has occurred and complies with requirements

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	105hrs	Planning and preparing installation	Lecture-discussion
	60min	Applying OH&S policies and procedures	discussion
	60min	Consulting appropriate personnel	Lecture-discussion
	60min	Checking necessary components	Question & Answer
	120min	Obtaining accessories	Individual Activity
	300min	Determining location of accessories	
	120min	Obtaining necessary materials	
	300min	Obtaining tools, equipment and test instruments	
Evaluation	1:30min	Written interview	Individual Activity
Summary	30min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #36 Sample materials		

Session Plan-65 (M15-LO2)

Unit of Competence	Install Communication Cables
Module Title	Installing Communication Cables
LO2	Perform installation of communication cables
Session Objectives:	At the end of this session the trainees shall be able to –

- Safety procedures are followed
- Correct procedures for installation of communication cables are performed in line with job requirements
- Schedule of work is followed to ensure work is completed in an agreed time, to a quality standard and with a minimum waste
- Further instructions are sought from a supervisor if unplanned events or conditions occur
- On-going checks of quality of work are done in accordance with instructions and Requirements

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	1650min	following Safety procedures	Lecture-discussion
	300min	Performing installation of communication cables	discussion
	300min	Following Schedule of work	Lecture-discussion
	120min	Checking quality of work	Question & Answer
	120min	Specification of communication cables	Individual Activity
Evaluation	60min	Written interview	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #2 Sample materials		

Session Plan-66 (M15-LO3)

Unit of Competence	Install Communication Cables
Module Title	Installing Communication Cables
LO3	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"> • undertake Final inspections to ensure the installed wiring systems conforms to requirements • notify Work completion in accordance with established procedures

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	600min	Taking final inspections	Lecture-discussion
	345min	Notifying completion of work	Lecture-discussion
Evaluation	60min	Written interview	Individual Activity
Summary	60min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #3 Sample materials		

Session Plan-67 (M16-LO1)

Unit of Competence	Provide Water Drainage		
Module Title	Providing Water Drainage		
LO1	Plan and prepare		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • obtain, confirm Work instructions, including plans, specifications, quality requirements and operational details and applied • follow Safety requirements in accordance with safety plans and policies • Signage/barricade requirements are identified and implemented • rectify Plant, tools and equipment selected to carry out tasks that are consistent with the requirements of the job, checked for serviceability and any faults or reported prior to commencement • Material quantity requirements are calculated in accordance with plans and/or specifications • Identify Materials appropriate to the work application obtained, prepared, safely handled and located ready for use • Identify Environmental protection requirements for the project in accordance with environmental plans and regulatory obligations and applied 		
Activities	Nominal Duration	Contents	Methods
	15min	Introduction	Lecture

Sessions	45min	Working instructions	Lecture-discussion
	60min	Following Safety requirements	discussion
	120min	Identifying Signage/barricade requirements	Lecture-discussion
	300min	Planting selected tools and equipment.	Question & Answer
	60min	Checking for serviceability and any faults	Individual Activity
	120min	Reporting prior to commencement.	
	240min	Calculating Material quantity	
Evaluation	45min	Written interview	Individual Activity
Summary	15min	Wrap-up and Feedback	Lecture-discussion
Resources	Learning Guide #1 Sample materials		

Session Plan-68 (M16-LO2)

Unit of Competence	Provide Water Drainage
Module Title	Providing Water Drainage
LO2	Install drainage for tiled surface
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Drainage channels and outlets are prepared and positioned to the drainage system for tiled floors • Tiled floor surface drainage channel and drainage outlets are fixed to specification • The drainage system is installed as core task of the plumber

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	Preparing Drainage channels.	Lecture-discussion Demonstration/ Observation
	60min	Preparing outlets.	Lecture-discussion Demonstration/ Observation
	180min	positioning to the drainage system for tiled floors	Lecture-discussion Demonstration/ Observation

	180min	Tilling floor surface drainage channel.	Demonstration/ Observation
	300min	Fixing drainage outlets.	Demonstration/ Observation
	60min	Installing drainage system.	Demonstration/ Observation
	60min	characteristics and the application of different	Lecture-discussion
	120min	Installing applicable standards.	Lecture-discussion Demonstration/ Observation
	60min	Proceeding water and air test systems.	Demonstration/ Observation
	120min	Installing surface drainage systems	Demonstration/ Observation
Evaluation	45min	Accomplishment of written test	Individual Activity
Summary	15min	Wrap-up and Feedback	Question & answer
Resources	<ul style="list-style-type: none"> • Learning Guide #2 • workplace or fully equipped assessment location 		

Session Plan-69 (M16-LO3)

Unit of Competence	Provide Water Drainage		
Module Title	Providing Water Drainage		
LO3	Complete work operations and clean up		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • clear Work area and materials disposed of, reused or recycled in accordance with legislation/regulations/ codes of practice and job specification • Clean Plant, tools and equipment, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	60min	Clearing Work areas	Lecture-discussion
	45min	cleaning plant, tools and equipment	Lecture-discussion

Evaluation	45min	Accomplishment written test	Individual Activity
Summary	15min	Wrap-up and Feedback	Question & answer
Resources	<ul style="list-style-type: none"> • Learning Guide #3 • Sample materials • Broom ,sponge and wet clothes 		

Session Plan-70 (M17-LO1)

Unit of Competence	Install, Service and Maintain Water Supply System and Components
Module Title	Installing Service and Maintaining Water Supply System and Components
LO1	Prepare for work
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Obtain Drawings and specifications • OH&S requirements associated with setting out and installing water services, and the workplace environment, are adhered to throughout the work • Identify assurance requirements and adhered to in accordance with workplace requirements • planned Tasks and sequenced in conjunction with others involved in or affected by the work • Select Tools and equipment for setting out and installing water piping systems, including personal safety equipment, and checked for serviceability • prepared Work area to support the efficient setting out and installation of water services

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	45min	Obtaining Drawings and specifications.	Lecture-discussion
	60min	defining OH&S requirements with setting out	Lecture-discussion
	60min	Identify Quality assurance requirements.	Lecture-discussion

	120min	Tasks are planned and sequencing of task in conjunction.	Lecture-discussion
	120min	Setting out Tools and equipment	Lecture-discussion
	300min	Install water piping systems	Demonstration/ Observation
	120min	Prepare Work area for setting out	Demonstration/ Observation
	120min	Install of water services	Demonstration/ Observation
Evaluation	60min	Written interview	Individual Activity
Summary	30 min	Wrap-up and Feedback	Question & answer
Resources	<ul style="list-style-type: none"> • Learning Guide #1 • 		

Session Plan-71 (M17-LO2)

Unit of Competence	Install, Service and Maintain Water Supply System and Components		
Module Title	Installing Service and Maintaining Water Supply System and Components		
LO2	Identify installation requirements		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Calculate Quantity and type of materials required from drawings and specifications or site inspection and comply with standards • Identify Materials and equipment and ordered/collected in accordance with workplace procedures • Check Materials and equipment for compliance with standards, docket/order form and for acceptable condition 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	180min	Calculating Quantity materials.	Lecture-discussion
	45min	Identifying type of materials as standard	Lecture-discussion

	30min	Identifying Materials /equipment	Lecture-discussion
	30min	orderings/collecting in materials	Lecture-discussion
Evaluation	45min	Written interview	Individual Activity
Summary	15min	Wrap-up and Feedback	Question & answer
Resources	<ul style="list-style-type: none"> • Learning Guide #2 		

Session Plan-72 (M17-LO3)

Unit of Competence	Install, Service and Maintain Water Supply System and Components		
Module Title	Installing Service and Maintaining Water Supply System and Components		
LO3	Install and test pipe system		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Pipe lines and fixture connection points are set out in accordance with drawings and specifications or job instructions, with consideration to the location of existing services • Trenches are excavated in accordance with standards and authorities' requirements • Installation of supports and clips are checked for compliance with the job specification, authorities' requirements and manufacturers' specifications • Pipes are installed and jointed in accordance with job specifications, design layout and standards without damage or distortion to pipe work, or surrounding environment and other services • Installation is tested to comply with standards and authorities' requirements and adjusted. 		
Activities	Nominal Duration	Contents	Methods
Sessions	15min	Introduction	Lecture
	300min	Setting out Pipe lines and fixture.	Lecture-discussion Demonstration
	180min	excavating Trenches as requirements	Demonstration/ Observation

	60min	Checking Installation of supports and clips.	Demonstration/ Observation
	180min	Installing Pipes are and jointing	Demonstration/ Observation
	120min	Testing Installation.	Demonstration/ Observation
Evaluation	60min	Accomplishment of written test	Individual
Summary	45min	Wrap-up and Feedback	Question & answer
Resources	<ul style="list-style-type: none"> • Learning Guide #3 • Workplace: Real or simulated work area • Appropriate site plan and working drawing • Drawing to the specific job 		

Session Plan-73 (M17-LO4)

Unit of Competence	Install, Service and Maintain Water Supply System and Components		
Module Title	Installing Service and Maintaining Water Supply System and Components		
LO4	Repair defective pipes and fittings		
Session Objectives:	At the end of this session the trainees shall be able to –		
	<ul style="list-style-type: none"> • Defective <i>pipes and fittings</i> are identified, disconnected and replaced with the same model • Replacements are checked to ensure they are free from defects and in accordance with standard specification or as required • Joints are tightly secured and leak free in accordance with the job requirements • Damaged areas are restored or repaired according to work procedures • Clogged pipes are cleared using appropriate method • Correct usage of tools and equipment is observed in accordance with job requirement • Appropriate PPE are used in accordance with job requirements 		
Activities	Nominal Duration	Contents	Methods
	15min	Recapitulation	Lecture

Sessions	45min	Identify Defective <i>pipes and fittings.</i>	Lecture-discussion Demonstration
	120min	disconnecting Defective <i>pipes and fittings</i>	Lecture- Demonstration
	120min	replacing Defective <i>pipes and fittings</i>	Lecture-discussion Demonstration
	60min	Checking replacements of defects.	Lecture-discussion Demonstration
	60min	Checking Joints are tightly secured.	Demonstration
	120min	Restoring or repairing damaged areas.	Demonstration
	60min	Clogged pipes are clear.	Demonstration
	60min	Observing correct usage of tools and equipment	Demonstration
	60min	Using Appropriate PPE.	Lecture-discussion
Evaluation	45min	Accomplishment of written test	Individual
Summary	15min	Wrap-up and Feedback	Question& answers
Resource		<ul style="list-style-type: none"> • Workplace: • Learning guide #4 • PPE • Sanitary hand tools :-pipe wrench 	

Session Plan-74 (M17-LO5)

Unit of Competence	Install, Service and Maintain Water Supply System and Components
Module Title	Installing Service and Maintaining Water Supply System and Components
LO5	Clean up
Session Objectives:	At the end of this session the trainees shall be able to –
	<ul style="list-style-type: none"> • Clear Work area and materials disposed of or recycled in accordance with State or Territory legislation and workplace procedures • Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and workplace procedures • completed Documentation in accordance with

workplace requirements

Activities	Nominal Duration	Contents	Methods
Sessions	15min	Recapitulation	Lecture
	120min	Cleaning Work area.	Lecture-discussion
	60min	Cleaning Tools and equipment	discussion
	120min	Completing Documentation	Lecture-discussion
Evaluation	45min	Written interview	Individual
Summary	60min	Wrap-up and Feedback	Question& answers
resource	Learning guide #5 Water supply equipment and tools		

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

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

