Course: **A Practical Approach to Basic Home Repairs – Utilities (Electrical, Plumbing, Air Conditioning)**

Contact Hours: **24**

Pre-requisite: **None**

Abstract

This course will provide individuals with the technical and practical knowledge to carry out basic home repairs involving the electrical, plumbing and air conditioning systems.

Some of the areas covered in this unit include basic maintenance of common electrical fixtures and devices, installing and maintaining simple systems of hot and cold water supply (water closets, sinks, taps, showers, heaters, and pumps) and performing routine maintenance of split unit air conditioning systems.

In order to ensure that the learner fully understands the concepts relating to these types of repairs, the course content was structured to maximize the contact hours allocated for practical training.

Target Audience

This course is ideally suited for homeowners or anyone who would like to learn how to carry out basic home repairs especially DIY enthusiasts.

Learning outcomes

1. Maintenance of Electrical Systems
2. Maintenance of Plumbing Systems
3. Maintenance of Air Conditioning Systems

Course Content

1. Maintenance of Electrical Systems

Cables: Types and size of cables (single core PVC insulated, two core PVC insulated cable with earth-continuity conductors (ecc), three-core rubber flex PVC insulated cable, armored cable).

Practical Applications: Conduit wiring for lighting and power circuits; surface mounting of lighting and power circuits; Use of flexible cables; wiring of distribution panels and sub panels; stripping of various electrical cables using the appropriate tools; bending of conduits; installation of trunking using the appropriate tool; wiring of plugs and power outlets adhering to the appropriate regulations and standards.

Testing: Utilize the multi-meter to perform basic tests on various electrical circuits (polarity, continuity and voltage).

2. Maintenance of Plumbing Systems

Identify and use various equipment and materials used in plumbing: Materials used in the manufacture of pipes, fixtures and fittings; Classification of fixtures and fittings; Methods of measuring, cutting, joining and assembling pipes and fittings; Roughing-in techniques; Types of taps and valves.

Installation of water supply, drain, waste systems: Systems (sinks, face basins, showerhead and control fittings, water closet, water pump)

3. Maintenance of Air Conditioning Systems

Components: Evaporators, condensers, compressors, Fans and control components.

Practical Applications: General servicing of the AC unit; checking refrigerant levels; topping up of refrigerant, cleaning filters, flaring of connections; checking for leaks; making proper electrical connections.

Assessment Criteria

In order to achieve Learning Outcome…	The Learner must…
1. Maintenance of Electrical Systems	1.1 Identify the various types and sizes of electrical cables generally used in electrical installation power and lighting circuits. 1.2 Select the appropriate types and size of electrical cables used for various applications in residential electrical installation power and lighting circuits. 1.3 Connect various plugs and power outlets adhering to the appropriate regulations and standards (110V / 220V). 1.4 Connect various circuits: one-way lighting; two-way and intermediate lighting; distribution panel with receptacle outlets; photocell controlled lighting circuit and ground fault interrupters. 1.5 Be able to use of the multi-meter to perform basic tests on various electrical circuits such as polarity, continuity and voltage.
2. Maintenance of Plumbing Systems	.1 Identify methods of measuring, cutting, joining and assembling pipes and fittings 2.2 Demonstrate the ability to install the following: Vanity sink , face basin, shower head and control fittings, water pump, kitchen sink and faucet, water closet and syphon.
3. Maintenance of Air Conditioning Systems	3.1 Explain the function and operation of Evaporators, Condensers, Compressors, Fans and control components. 3.2 Perform general servicing of an AC unit such as cleaning filters, checking refrigerant level, flaring connections, checking for leaks.

Essential Learning Resources:

Learners will have access to a fully equipped workshop to carry out the various maintenance tasks.