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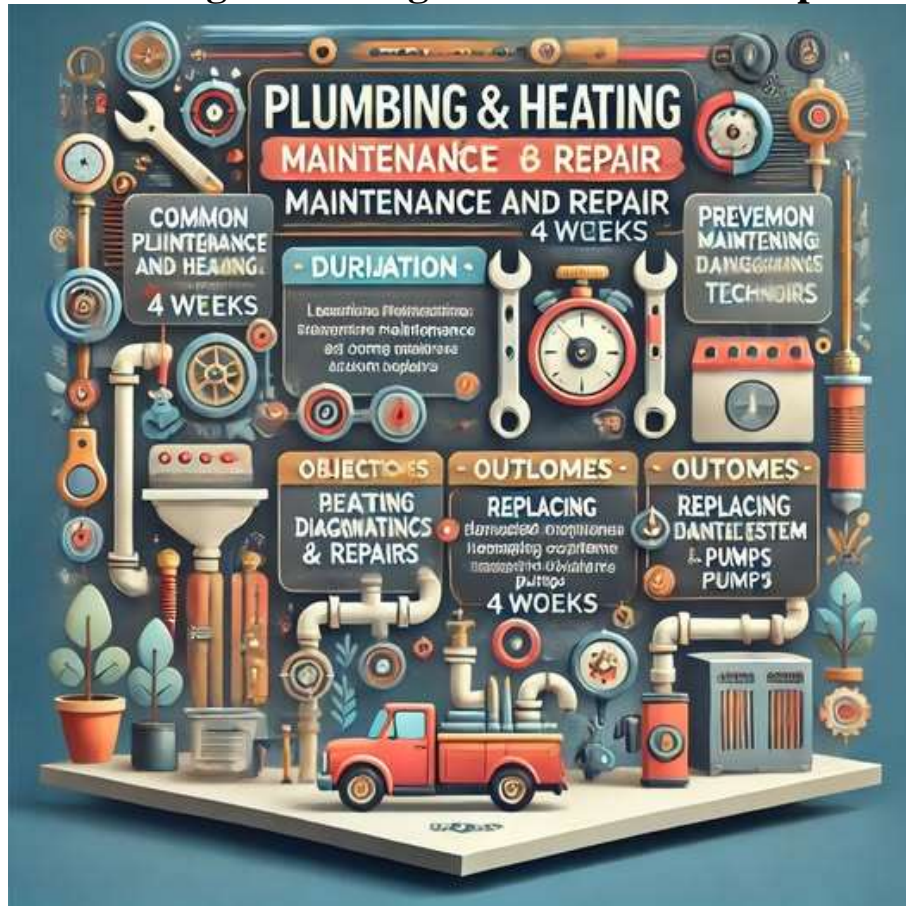
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المكتب الهندسي لخدمات التكنولوجيا والبرمجيات

Engineering office for Technology and Software Services

Plumbing & Heating: Maintenance & Repair



Detailed Course Plan – Plumbing & Heating: Maintenance & Repair

Code: 28004PUM-TECH

Duration: 4 Weeks (3 sessions per week)

Course Objectives

- Develop core skills in **preventive maintenance** and common plumbing/heating repairs.
- Gain **hands-on experience** in identifying and troubleshooting system faults.
- Learn how to **extend system lifespan** through routine inspections and care.

Introduction

Main Branch: United building – E Shams –Front NBE
, El Siouf _Alexandria

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Engineering office for Technology and Software Services

Plumbing and heating systems require ongoing care to ensure **efficiency, safety, and longevity**. Malfunctions like leaks, pressure drops, or heating failure can lead to major issues if not addressed quickly. This course is designed to equip technicians with the **skills to maintain, diagnose, and repair** these systems effectively.



Course Description

This course introduces participants to **core maintenance techniques** and repair strategies for plumbing and heating systems. Emphasis is placed on **practical diagnostics**, routine servicing, and the replacement of common components. By the end of the course, participants will be able to **troubleshoot and fix frequent issues** independently.



Target Audience

- Entry-level or mid-level plumbing/heating technicians.
- Maintenance staff in **residential, commercial, or industrial facilities**.
- Apprentices looking to upgrade their **troubleshooting and repair** skills.
- Technical school graduates entering field service roles.



What You Will Learn

- ✓ Typical plumbing & heating system faults and their causes.
- ✓ Preventive maintenance routines to **minimize breakdowns**.
- ✓ Techniques for **detecting and fixing water leaks**.
- ✓ Procedures for servicing **hot water and heating systems**.
- ✓ Replacing **valves, pipes, pumps**, and other faulty components.
- ✓ Understanding **diagnostic tools** used in plumbing and HVAC maintenance.



Materials Included

- Illustrated **repair and maintenance manual**.
- Sample fault log templates and **checklists for inspections**.
- Access to **real-world case studies** and example systems.
- Troubleshooting flowcharts and diagnostic tool guides.
- Workshop access to **live components and mock systems**.



Requirements / Instructions

- Prior **basic plumbing knowledge** is recommended but not required.
- Attendees must **bring work gloves and safety shoes** for all lab sessions.

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- Each week includes **1 theoretical session + 2 hands-on practicals**.
- Final week includes a **troubleshooting challenge and component replacement task**.



Course Schedule

◆ Week 1

- **Session 1:** Introduction to System Failures & Preventive Maintenance
- **Session 2:** Common Pipe Leaks and Water Pressure Issues
- **Session 3:** Leak Detection and Sealing Techniques

◆ Week 2

- **Session 4:** Maintenance of Hot Water Systems
- **Session 5:** Radiators and Heating Coil Troubleshooting
- **Session 6:** Identifying and Replacing Faulty Valves

◆ Week 3

- **Session 7:** Pump Maintenance and Water Circulation Issues
- **Session 8:** Pipe Joint Failures – Inspection & Repair
- **Session 9:** System Flushing and Descaling Methods

◆ Week 4

- **Session 10:** Troubleshooting Scenario Practice
- **Session 11:** Replacing Pipes, Fittings, and Pressure Regulators
- **Session 12:** Final Maintenance & Repair Workshop Simulation



Learning Outcomes

By the end of this course, participants will:

- ✓ Diagnose common plumbing and heating issues effectively.
- ✓ Perform preventive maintenance on **hot water and heating systems**.
- ✓ Replace **worn-out components** such as valves, pumps, and pipes.
- ✓ Improve system performance and reduce **operational downtime**.
- ✓ Understand how to create a **maintenance report and repair log**.

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