

€ TRAINING

Plumbing Design and Installation Techniques





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Introduction:

This training program offers a comprehensive foundation in plumbing design and installation, equipping participants with the skills to create effective plumbing systems for various building types. Through it, participants will gain practical knowledge, preparing them for roles in both residential and commercial plumbing projects.

Program Objectives:

By the end of this program, participants will be able to:

- Understand the key principles of plumbing system design.
- Develop layouts and plan piping routes for efficient water and waste management.
- Gain experience with installation techniques and tools.
- Comply with plumbing codes and standards for safe and effective system setup.
- Troubleshoot common installation challenges and apply best practices.

Targeted Audience:

- Aspiring and intermediate plumbers.
- Construction professionals involved in plumbing installations.
- Site supervisors and managers overseeing plumbing projects.
- Facility maintenance personnel.

Program Outline:

Unit 1:

Introduction to Plumbing Systems and Design Principles:

- Overview of plumbing systems: purpose and components.
- Key principles in water supply, drainage, and venting systems.
- Design considerations for residential, commercial, and industrial buildings.
- Materials selection: types of pipes, fittings, and fixtures.

- Codes and standards guiding plumbing design and installation.

Unit 2:

Planning and Layout for Plumbing Installations:

- Blueprint reading and interpreting plumbing schematics.
- Mapping out efficient pipe routing and system layout.
- Calculating water pressure, flow rates, and pipe sizing.
- Designing drainage and venting systems to prevent blockages and maintain flow.
- Understanding building and plumbing code requirements for layout.

Unit 3:

Installation Techniques for Water Supply Systems:

- Step-by-step procedures for installing water supply lines.
- Techniques for joining and sealing different types of pipes.
- Installation of fixtures such as sinks, toilets, and showers.
- Leak testing and pressure testing to ensure system integrity.
- Safety protocols and tool handling during installation.

Unit 4:

Drainage System Installation and Wastewater Management:

- Components and design of drainage and waste removal systems.
- Techniques for installing drainpipes, traps, and vent systems.
- Best practices for slope calculation and pipe alignment.
- Inspecting and testing drainage systems for compliance and functionality.
- Introduction to sustainable wastewater management techniques.

Unit 5:

Troubleshooting and Maintenance Best Practices



- Identifying and addressing common installation and operational issues.
- Techniques for diagnosing leaks, blockages, and system inefficiencies.
- Routine maintenance tasks to extend the life of plumbing systems.
- Using diagnostic tools to assess system performance.
- Strategies for retrofitting and upgrading plumbing systems.