

Course Name: Plumbing Level I

Contact Hours: 144

Number of Sessions: 48

Number of Hrs./Session: 3

Mode of Instruction: Classroom

Course Description:

Course is designed based on the NCCER curriculum. Students must take all four levels of plumbing in order to receive a diploma/certificate from New Horizons.

Text: Plumbing Level 1 Trainee Guide 5th edition, ISBN: 9780137933839

Course Outline and Modules:

1. Introduction to the Plumbing Profession (*5 Hours*) Introduces trainees to the many career options available in today's plumbing profession. Provides a history of plumbing and also discusses the current technology, industries, and associations that make up the modern plumbing profession. Also reviews human relations and safety skills. (Module ID 02101-12)
2. Plumbing Safety (*22.5 Hours*) Discusses the causes of accidents and their consequences and repercussions in terms of delays, increased expenses, injury, and loss of life. Reviews the types and proper use of personal protective equipment (PPE). Instructs trainees in the use of critical safety information conveyed in hazard communication (HazCom), safety signs, signals, lockout/tagout, and emergency response. Covers confined-space safety, and reviews safety issues related to hand and power tools. (Module ID 02102-12)
3. Tools of the Plumbing Trade (*10 Hours*) Instructs trainees in the care and use of the different types of hand and power tools they will use on the job. Gives trainees the information they need to select the appropriate tools for different tasks, and reviews tool maintenance and safety issues. (Module ID 02103-12)
4. Introduction to Plumbing Math (*12.5 Hours*) Reviews basic math concepts, such as whole numbers, fractions, decimals, and squares, and demonstrates how they apply to on-the-job situations. Teaches trainees how to measure pipe using fitting tables and framing squares and how to calculate 45-degree offsets. (Module ID 02104-12)
5. Introduction to Plumbing Drawings (*17.5 Hours*) Introduces trainees to the different types of plumbing drawings they will encounter on the job and discusses how to interpret and apply them when laying out and installing plumbing systems. Discusses the symbols used in plumbing and mechanical drawings and reviews isometric, oblique, orthographic, as well as schematic drawings. Requires trainees to

render plumbing drawings and to recognize how code requirements apply to plumbing drawings.
(Module ID 02105-12)

6. Plastic Pipe and fittings (*12.5 Hours*) Introduces trainees to the different types of plastic pipe and fittings used in plumbing applications, including ABS, PVC, CPVC, PE, PEX, and PB. Describes how to measure, cut, join, and support plastic pipe according to manufacturer's instructions and applicable codes. Also discusses pressure testing of plastic pipe once installed. (Module ID 02106-12)
7. Copper Pipe and Fittings (*12.5 Hours*) Discusses sizing, labeling, and applications of copper pipe and fittings and reviews the types of valves that can be used on copper pipe systems. Explains proper methods for cutting, joining, and installing copper pipe. Also addresses insulation, pressure testing, seismic codes, and handling and storage requirements. (Module ID 02107-12)
8. Cast-Iron Pipe and Fittings (*12.5 Hours*) Introduces trainees to hub-and-spigot and no-hub cast-iron pipe and fittings and their applications in DWV systems. Reviews material properties, storage and handling requirements, and fittings and valves. Covers joining methods, installation, and testing. (Module ID 02108-12)
9. Carbon Steel Pipe and Fittings (*12.5 Hours*) Discusses threading, labeling, and sizing of steel pipe and reviews the differences between domestic and imported pipe. Covers the proper techniques for measuring, cutting, threading, joining, and hanging steel pipe. Also reviews corrugated stainless steel tubing. (Module ID 02109-12)
10. Introduction to Plumbing Fixtures (*7.5 Hours*) Discusses the proper applications of code-approved fixtures in plumbing installations. Reviews the different types of fixtures and the materials used in them. Also covers storage, handling, and code requirements. (Module ID 02110-12)
11. Introduction to Drain, Waste, and Vent (DWV) Systems (*10 Hours*) Explains how DWV systems remove waste safely and effectively. Discusses how system components, such as pipe, drains, traps, and vents work. Reviews drain and vent sizing, grade, and waste treatment. Also discusses how building sewers and sewer drains connect the DWV system to the public sewer system. (Module ID 02111-12)
12. Introduction to Water Distribution Systems (*10 Hours*) Identifies the major components of water distribution systems and describes their functions. Reviews water sources and treatment methods and covers supply and distribution for the different types of systems that trainees will install on the job. (Module ID 02112-12)