



CORE CURRICULUM: Introductory Craft Skills

Competencies / Objectives

MODULE 00101-09 – BASIC SAFETY

1. Explain the idea of a safety culture and its importance in the construction crafts.
2. Identify causes of accidents and the impact of accident costs.
3. Explain the role of OSHA in job-site safety.
4. Explain OSHA's General Duty Clause and 1926 CFR Subpart C.
5. Recognize hazard recognition and risk assessment techniques.
6. Explain fall protection, ladder, stair, and scaffold procedures and requirements.
7. Identify struck-by hazards and demonstrate safe working procedures and requirements.
8. Identify caught-in-between hazards and demonstrate safe working procedures and requirements.
9. Define safe work procedures to use around electrical hazards.
10. Demonstrate the use and care of appropriate personal protective equipment (PPE).
11. Explain the importance of hazard communications (HazCom) and Material Safety Data Sheets (MSDSs).
12. Identify other construction hazards on your job site, including hazardous material exposures, environmental elements, welding and cutting hazards, confined spaces, and fires.

MODULE 00102-09 – INTRODUCTION TO CONSTRUCTION MATH

1. Add, subtract, multiply, and divide whole numbers, with and without a calculator.
2. Use a standard ruler, a metric ruler, and a measuring tape to measure.
3. Add, subtract, multiply, and divide fractions.
4. Add, subtract, multiply, and divide decimals, with and without a calculator.
5. Convert decimals to percentages and percentages to decimals.
6. Convert fractions to decimals and decimals to fractions.
7. Explain what the metric system is and how it is important in the construction trade.
8. Recognize and use metric units of length, weight, volume, and temperature.
9. Recognize some of the basic shapes used in the construction industry and apply basic geometry to measure them.

MODULE 00103-09 – INTRODUCTION TO HAND TOOLS

1. Recognize and identify some of the basic hand tools and their proper uses in the construction trade.
2. Visually inspect hand tools to determine if they are safe to use.
3. Safely use hand tools.

MODULE 00104-09 – INTRODUCTION TO POWER TOOLS

1. Identify power tools commonly used in the construction trades.
2. Use power tools safely.
3. Explain how to maintain power tools properly.

MODULE 00105-09 – INTRODUCTION TO CONSTRUCTION DRAWINGS

1. Recognize and identify basic construction drawing terms, components, and symbols.
2. Relate information on construction drawings to actual locations on the print.
3. Recognize different classifications of construction drawings.
4. Interpret and use drawing dimensions.

MODULE 00106-09 – BASIC RIGGING

1. Identify and describe the use of slings and common rigging hardware.
2. Describe basic inspection techniques and rejection criteria used for slings and hardware.
3. Describe basic hitch configurations and their proper connections.
4. Describe basic load-handling safety practices.
5. Demonstrate proper use of American National Standards Institute (ANSI) hand signals.

MODULE 00107-09 – BASIC COMMUNICATION SKILLS

1. Interpret information and instructions presented in both verbal and written form.
2. Communicate effectively in on-the-job situations using verbal and written skills.
3. Communicate effectively on the job using electronic communication devices.

MODULE 00108-09 – BASIC EMPLOYABILITY SKILLS

1. Explain the role of an employee in the construction industry.
2. Demonstrate critical thinking skills and the ability to solve problems using those skills.
3. Demonstrate knowledge of computer systems and explain common uses for computers in the construction industry.
4. Define effective relationship skills.
5. Recognize workplace issues such as sexual harassment, stress, and substance abuse.

MODULE 00109-09 – INTRODUCTION TO MATERIALS HANDLING

1. Define a load.
2. Establish a pre-task plan prior to moving a load.
3. Use proper materials-handling techniques.
4. Choose appropriate materials-handling equipment for the task.
5. Recognize hazards and follow safety procedures required for materials handling.



Level One

MODULE 02101-05 – INTRODUCTION TO THE PLUMBING PROFESSION

1. Describe the history of the plumbing profession.
2. Identify the responsibilities of a person working in the construction industry.
3. State the personal characteristics of a professional.
4. Identify the stages of progress within the plumbing profession and its positive impact on society.

MODULE 02102-05 – PLUMBING SAFETY

1. Describe the common unsafe acts and unsafe conditions that cause accidents.
2. Describe how to handle unsafe acts and unsafe conditions.
3. Explain how the cost of accidents and illnesses affects everyone on site.
4. Demonstrate the use and care of appropriate personal protective equipment.
5. Identify job-site hazardous work specific to plumbers.
6. Demonstrate the proper use of ladders.
7. Demonstrate how to maintain power tools safely.
8. Explain how to work safely in and around a trench.
9. Describe and demonstrate the lockout/tagout process.

MODULE 02103-05 – PLUMBING TOOLS

1. Identify the basic hand and power tools used in the plumbing trade.
2. Demonstrate the proper use of plumbing tools.
3. Demonstrate the ability to know when and how to select the proper tool(s) for tasks.
4. Demonstrate the proper maintenance for caring for hand and power tools.
5. Demonstrate how to prepare a surface for tool use.
6. Describe the safety requirements for using plumbing tools.

MODULE 02104-05 – INTRODUCTION TO TO PLUMBING MATH

1. Add, subtract, multiply, and divide whole numbers.
2. Add, subtract, multiply, and divide fractions.
3. Add, subtract, multiply, and divide decimals.
4. Convert decimals to percentages and percentages to decimals.
5. Convert fractions to decimals and decimals to fractions.
6. Explain what the metric system is and how it is important in the plumbing trade.
7. Square various numbers and take square roots of numbers, with and without a calculator.
8. Identify the parts of a fitting and use common pipe-measuring techniques.
9. Use fitting dimension tables to determine fitting allowances and thread makeup.
10. Calculate end-to-end measurements using fitting allowances and thread makeup.

MODULE 02105-05 – INTRODUCTION TO PLUMBING DRAWINGS

1. Identify pictorial (isometric and oblique), schematic, and orthographic drawings, and discuss how different views are used to depict information about objects.
2. Identify the basic symbols used in schematic drawings of pipe assemblies.
3. Explain the types of drawings that may be included in a set of plumbing drawings and the relationship among the different drawings.
4. Interpret plumbing-related information from a set of plumbing drawings.
5. Sketch orthographic and schematic drawings.
6. Use an architect's scale to draw lines to scale and to measure lines drawn to scale.
7. Discuss how code requirements apply to certain drawings.

MODULE 02106-05 – PLASTIC PIPE AND FITTINGS

1. Identify types of materials and schedules of plastic piping.
2. Identify proper and improper applications of plastic piping.
3. Identify types of fittings and valves used with plastic piping.
4. Identify and determine the kinds of hangers and supports needed for plastic piping.
5. Identify the various techniques used in hanging and supporting plastic piping.
6. Properly measure, cut, and join plastic piping.
7. Explain proper procedures for the handling, storage, and protection of plastic pipes.

MODULE 02107-05 – COPPER PIPE AND FITTINGS

1. Identify the types of materials and schedules used with copper piping.
2. Identify the material properties, storage, and handling requirements of copper piping.
3. Identify the types of fittings and valves used with copper piping.
4. Identify the techniques used in hanging and supporting copper piping.
5. Properly measure, ream, cut, and join copper piping.
6. Identify the hazards and safety precautions associated with copper piping.

MODULE 02108-05 – CAST-IRON PIPE AND FITTINGS

1. Recognize proper and improper applications of cast-iron piping.
2. Identify the material properties, storage, and handling requirements of cast iron piping.
3. Identify the types of materials and schedules used in cast-iron piping.
4. Identify the types of fittings used with cast-iron piping.
5. Identify the various techniques used in handling and supporting cast-iron piping.
6. Properly measure, cut, and join cast-iron piping.
7. Identify the hazards and safety precautions associated with cast-iron piping.

MODULE 02109-05 – CARBON STEEL PIPE AND FITTINGS

1. Recognize proper applications of carbon steel piping.
2. Identify the material properties, storage, and handling requirements of carbon steel piping.
3. Identify the various techniques used in hanging and supporting carbon steel piping.
4. Properly measure, cut, groove, thread, and join carbon steel piping.

MODULE 02110-05 – CORRUGATED STAINLESS STEEL TUBING

1. Identify the common manufacturers of corrugated stainless steel tubing.
2. Recognize proper and improper applications of corrugated stainless steel tubing.
3. Identify the various techniques used in hanging and supporting corrugated stainless steel tubing.
4. Explain how to properly measure, cut, join, and groove corrugated stainless steel tubing.
5. Identify the material properties, storage, and handling requirements of corrugated stainless steel tubing.

MODULE 02111-05 – FIXTURES AND FAUCETS

1. Identify the basic types of materials used in the manufacture of plumbing fixtures.
2. Discuss common types of sinks, lavatories, and faucets.
3. Identify and discuss common types of bathtubs, bath-shower modules, shower stalls, and shower baths.
4. Discuss common types of toilets, urinals, and bidets.
5. Identify and describe common types of drinking fountains and water coolers.
6. Discuss common types of garbage disposals and domestic dishwashers.

MODULE 02112-05 – INTRODUCTION TO DRAIN, WASTE, AND VENT (DWV) SYSTEMS

1. Explain how waste moves from a fixture through the drain system to the environment.
2. Identify the major components of a drainage system and describe their functions.
3. Identify the different types of traps and their components, explain the importance of traps, and identify the ways that traps can lose their seals.
4. Identify the various types of drain, waste, and vent (DWV) fittings and describe their applications.
5. Identify significant code and health issues, violations, and consequences related to DWV systems.

MODULE 02113-05 – INTRODUCTION TO WATER DISTRIBUTION SYSTEMS

1. Describe the process in which water is distributed in municipal, residential, and private water systems.
2. Identify the major components of a water distribution system, and describe the function of each component.
3. Explain the relationships between components of a water distribution system.