**National Center for Construction Education & Research**
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# 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.

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# MASONRY

## Competencies / Objectives

# Level One

### MODULE 28101-04 - INTRODUCTION TO MASONRY

1. Discuss the history of masonry.
2. Describe modern masonry materials and methods.
3. Explain career ladders and advancement possibilities in masonry work.
4. Describe the skills, attitudes, and abilities needed to work as a mason.
5. State the safety precautions that must be practiced at a work site, including the following:
   - Safety practices
   - Fall-protection procedures
   - Forklift-safety operations
6. Perform the following basic bricklaying procedures:
   - Mixing of mortar
   - Laying a mortar bed
   - Laying bricks
7. Put on eye protection, respiratory protection, and a safety harness.
8. Use the correct procedures for fueling and starting a gasoline-powered tool.

### MODULE 28102-04 - MASONRY TOOLS AND EQUIPMENT

1. Identify and name the tools used in performing masonry work.
2. Identify and name the equipment used in performing masonry work.
3. Describe how each tool is used.
4. Describe how the equipment is used.
5. Associate trade terms with the appropriate tools and equipment.
6. Demonstrate the correct procedures for assembling and disassembling scaffolding according to federal safety regulations, under the supervision of a competent person.

### MODULE 28103-04 - MEASUREMENTS, DRAWINGS, AND SPECIFICATIONS

1. Work with denominate numbers.
2. Read a mason's measure.
3. Convert measurements in the U.S. Customary (English) system into their metric equivalents.
4. Recognize, identify, and calculate areas, circumferences, and volumes of basic geometric shapes.
5. Identify the basic parts of a set of drawings.
6. Discuss the different types of specifications used in the building industry and the sections that pertain to masonry.

## MODULE 28104-04 - MORTAR

1. Name and describe the primary ingredients in mortar and their properties.
2. Identify the various types of mortar used in masonry work.
3. Describe the common admixtures and their uses.
4. Identify the common problems found in mortar application and their solutions.
5. Properly set up the mortar mixing area.
6. Properly mix mortar by hand.
7. Properly mix mortar with a mechanical mixer.

## MODULE 28105-04 - MASONRY UNITS AND INSTALLATION TECHNIQUES

1. Describe the most common types of masonry units.
2. Describe and demonstrate how to set up a wall.
3. Lay a dry bond.
4. Spread and furrow a bed joint, and butter masonry units.
5. Describe the different types of masonry bonds.
6. Cut brick and block accurately.
7. Lay masonry units in a true course.