

Introductory Craft Skills- 3 Credit Hours

Competencies

BASIC SAFETY

1. Explain the role that safety plays in the construction crafts.
2. Describe the meaning of job-site safety.
3. Describe the characteristics of a competent person and a qualified person.
4. Explain the appropriate safety precautions to take around common job-site hazards.
5. Demonstrate the use and care of appropriate personal protective equipment (PPE).
6. Properly don and remove personal protective equipment (safety goggles, hard hat, and personal fall protection).
7. Follow the safety procedures required for lifting heavy objects.
8. Describe safe behavior on and around ladders and scaffolds.
9. Explain the importance of Hazard Communications (HazCom) and material safety data sheets (MSDSs).
10. Describe fire prevention and firefighting techniques.
11. Define safe work procedures to use around electrical hazards.

INTRODUCTION TO CONSTRUCTION MATH

1. Add, subtract, multiply, and divide whole numbers, with and without a calculator.
2. Use a standard ruler and a metric ruler 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.

INTRODUCTION TO HAND TOOLS

1. Recognize and identify some of the basic hand tools used in the construction trade.
2. Use hand tools safely.
3. Describe the basic procedures for taking care of hand tools.

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.

INTRODUCTION TO BLUEPRINTS

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

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.

BASIC COMMUNICATION SKILLS

1. Demonstrate the ability to interpret information and instructions presented in both written and verbal form.
2. Demonstrate the ability to communicate effectively in on-the-job situations using written and verbal skills.

BASIC EMPLOYABILITY SKILLS

1. Explain the construction industry, the role of the companies that make up the industry, and the role of individual professionals in the 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. Demonstrate effective relationship skills with teammates and supervisors, the ability to work on a team, and appropriate leadership skills.
5. Be aware of workplace issues such as sexual harassment, stress, and substance abuse.

Performance Tasks

BASIC SAFETY

1. Inspect PPE to determine if it is safe to use (PPE should include safety goggles, hard hat, gloves, safety harness, and safety shoes).
2. Properly don and remove PPE (safety goggles, hard hat, and personal fall protection).
3. Demonstrate safe lifting procedures.

INTRODUCTION TO CONSTRUCTION MATH This is a knowledge-based module; there is no performance testing.

INTRODUCTION TO HAND TOOLS

1. Visually inspect the following tools to determine if they are safe to use:
 - Hammer
 - Screwdriver
 - Saw
2. Make a straight square cut using a crosscut saw. To prepare for sawing, the trainee should mark the wood with a combination square and support the work. The first stroke should be toward the trainee's body. The saw should be kept vertical to the work.
3. Safely and properly use the following tools:
 - Hammer and cat's paw (to drive and pull nails)
 - Screwdriver (slotted or Phillips)
 - Adjustable wrench
 - Channellock® pliers and adjustable wrench
 - Spirit level
 - Carpenter's square and steel tape
 - Saw

INTRODUCTION TO POWER TOOLS

1. Safely and properly operate an electric drill, ensuring the following:

- The equipment and work area are safe prior to operation, and appropriate personal protective equipment is being worn
 - The right bit is chosen for the job and is loaded properly into the chuck opening
 - The drill is held with both hands and a small indent is made in the material before the hole is drilled
 - The work that is being drilled is firmly clamped or supported
 - Two clean holes are produced after drilling
2. Safely and properly operate a circular saw, ensuring the following:
- The equipment and work area are safe prior to operation, and appropriate personal protective equipment is being worn
 - The material to be cut is properly secured
 - The front edge of the base plate is properly placed on the work so the guide notch is in line with the cutmark
 - The blade depth is properly adjusted to the thickness of the wood being cut
 - The blade has revved up to full speed before moving the saw forward
 - The saw handles are gripped firmly with two hands
 - The blade is used as a guide during the cutting operation
 - The trigger switch is released
3. Safely and properly operate a bench grinder, ensuring the following:
- The equipment and work area are safe prior to operation, and appropriate personal protective equipment is being worn (to include a face shield)
 - An adjustable tool rest is being used for support if working on metal pieces
 - A 1/8-inch maximum gap is between the tool rest and the wheel
 - The wheel comes to full speed before it touches the work
 - The face of the wheel is used per manufacturer's recommendations.
4. Safely and properly operate a portable belt sander, ensuring the following:
- The equipment and work area are safe prior to operation, and appropriate personal protective equipment is being worn
 - The correct grade of sandpaper is chosen for the job
 - The sander is resting on its heel when starting up the motor
 - The sander is lowered onto the workpiece once the sander is moving
 - The sander is kept level as it is being moved across the workpiece
 - The sander is moving at all times it is in contact with the workpiece
 - The sander is tipped back onto its heel when the work is finished
 - The wheel comes to full speed before it touches the work
 - The face of the wheel is used whenever possible
5. Safely and properly operate a pneumatic power nailer, ensuring the following:
- The equipment and work area are safe prior to operation, and appropriate personal protective equipment is being worn
 - The manufacturer's instructions are read before operating the nailer
 - The nails are properly loaded into the nailer, and the correct nails are selected for the job
 - The hoses are connected properly
 - The air compressor is checked and adjusted accordingly
 - A test nail is first tried in scrap material and the pressure is adjusted accordingly

- If nailing wall materials, the trainee knows what is in the wall and what is on the other side before nailing
- If nailing wall materials, the wall studs have been located and marked before nailing
- The nailer is held firmly against the material to be fastened before pressing the trigger
- The air hose is disconnected once the job is finished

INTRODUCTION TO BLUEPRINTS

1. Using the floor plan supplied at the back of this module, locate the game room interior wall.
2. Using the floor plan supplied at the back of this module, give the distance from gridline 1 to gridline 3.
3. Using the floor plan supplied at the back of this module, determine the distance from the edge of the storage room doors across the lobby to the edge of the east set of double doors.

BASIC RIGGING

1. Select and inspect appropriate slings for a lift.
2. Given various loads, determine the proper hitch to be used.
3. Select and inspect appropriate hardware and/or lifting equipment.
4. Demonstrate and/or simulate the proper techniques for connecting hitches.
5. Demonstrate the proper use of all hand signals according to *ANSI B30.2* and *B30.5*.
6. Describe or demonstrate pre-lift safety checks.
7. Demonstrate and/or simulate how to lift the load level.
8. Describe and/or demonstrate loading and disconnecting safety precautions

BASIC COMMUNICATION SKILLS

1. Write a daily report, ensuring it is as follows:
 - Clear (understandable)
 - Concise (to the point)
 - Correct (documents daily activities, manpower, equipment and materials, as well as safety issues; documents owner/ architect instructions; and includes correct spelling and punctuation)
2. Fill out work-related forms (for example, accident reports, time and materials, training reports, time sheets, punch lists, change orders, and RFIs), ensuring that they are as follows:
 - Complete
 - Accurate
 - On time
3. Read instructions for how to properly don a safety harness, and orally instruct another person to don the apparatus.
4. Perform a given task after listening to oral instructions.

BASIC EMPLOYABILITY SKILLS

1. Prepare and submit a complete employment application.
2. Demonstrate the ability to access, retrieve, and print from the following basic software programs:
 - Email
 - Databases
 - Internet
3. Divide into teams of three or more students, elect a team leader/presenter and a recorder, and develop a list detailing how employees can affect their company's profitability and its ability to reward employees. The recorder should scribe the punch list. The leader should present the list to the class and to the instructor.