

BUILDING CONSTRUCTION 1, 2, 3, and 4

DIRECTIONS: Evaluate the student using the applicable rating scales below and check the appropriate box to indicate the degree of competency. The ratings 3, 2, 1, and N are not intended to represent the traditional school grading system of A, B, C, and D. The description associated with each of the ratings focuses on the level of student performance or cognition for each of the competencies listed below.

PERFORMANCE RATING

- 3 - Skilled--can perform task independently with no supervision
 2 - Moderately skilled--can perform task completely with limited supervision
 1 - Limitedly skilled--requires instruction and close supervision
 N - No exposure--has no experience or knowledge of this task

COGNITIVE RATING

- 3 - Knowledgeable--can apply the concept to solve problems
 2 - Moderately knowledgeable--understands the concept
 1 - Limited knowledge--requires additional instruction
 N - No exposure--has not received instruction in this area

MODULE A.**BASIC SAFETY**

3 2 1 N

- ___ ___ ___ ___ 1. Identify the responsibilities and personal characteristics of a professional craftsman.
- ___ ___ ___ ___ 2. Explain the role that safety plays in the construction crafts.
- ___ ___ ___ ___ 3. Describe what job-site safety means.
- ___ ___ ___ ___ 4. Explain the appropriate safety precautions around common job-site hazards.
- ___ ___ ___ ___ 5. Demonstrate the use and care of appropriate personal protective equipment.
- ___ ___ ___ ___ 6. Follow safe procedures for lifting heavy objects.
- ___ ___ ___ ___ 7. Describe safe behavior on and around ladders and scaffolds.
- ___ ___ ___ ___ 8. Explain the importance of the HazCom (Hazard Communication Standard) requirement and MSDs (Material Safety Data Sheets).
- ___ ___ ___ ___ 9. Describe fire prevention and fire fighting techniques.
- ___ ___ ___ ___ 10. Define safe work procedures around electrical hazards.
- ___ ___ ___ ___ 11. Complete 10-hour OSHA course/assessment and receive card. (SDE Requirement)

MODULE B.**BASIC MATH**

3 2 1 N

- ___ ___ ___ ___ 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 percents and percents 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 C:**INTRODUCTION TO HAND TOOLS**

3 2 1 N

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

MODULE D:**INTRODUCTION TO POWER TOOLS**

3 2 1 N

- ___ ___ ___ ___ 1. Identify commonly used power tools of the construction trade.
- ___ ___ ___ ___ 2. Use power tools safely.
- ___ ___ ___ ___ 3. Explain how to maintain power tools properly.

MODULE E:**INTRODUCTION TO BLUEPRINTS**

3 2 1 N

- ___ ___ ___ ___ 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.

MODULE F:**BASIC RIGGING (Optional)**

3 2 1 N

- ___ ___ ___ ___ 1. Explain how ropes, chains, hoists, loaders, and cranes are used to move material and equipment from one location to another on a job site.
- ___ ___ ___ ___ 2. Describe inspection techniques and load-handling safety practices.
- ___ ___ ___ ___ 3. Explain the American National Standards Institute (ANSI) hand signals.

MODULE G: BASIC COMMUNICATION SKILLS
(SDE Requirement)

- 3 2 1 N
 ___ ___ ___ ___
1. Explain techniques for communicating effectively with coworkers and supervisors.
 2. Demonstrate verbal and written communication skills necessary in the workplace.
 3. Demonstrate telephone and e-communication skills necessary in the workplace.

MODULE H: BASIC EMPLOYABILITY SKILLS
(SDE Requirement)

- 3 2 1 N
 ___ ___ ___ ___
1. Identify the roles of individuals and companies in the construction industry.
 2. Explain the importance critical thinking and problem solving skills in the workplace.
 3. Describe computer systems and their industry applications.
 4. Explain interpersonal relationship skills, self-presentation, and key workplace issues such as sexual harassment, stress, and substance abuse.

BUILDING CONSTRUCTION 1, 2, 3, and 4

UNIT A: DEMONSTRATING KNOWLEDGE OF AND ABILITY TO USE POWER OPERATED CARPENTRY TOOLS AND EQUIPMENT

- 3 2 1 N
 ___ ___ ___ ___
1. Inspect, operate, and clean a table saw.
 2. Inspect, operate, and clean a radial arm saw/chop saw.
 3. Inspect, operate, and clean a drill and drill press.
 4. Inspect, operate, and clean a band saw.
 5. Inspect, operate, and clean a belt and disc sander.
 6. Inspect, operate, and clean a router.
 7. Inspect, operate, and clean a planer.

UNIT B: DEMONSTRATING BASIC

KNOWLEDGE AND SKILLS REQUIRED TO FRAME A ONE-STORY BUILDING USING A SIMPLE PLAN

- 3 2 1 N
 ___ ___ ___ ___
1. Measure, cut, and install headers and girders for a floor frame.
 2. Measure, cut, and install floor joists.
 3. Cut and install solid and/or X-bridging.
 4. Install subfloor.
 5. Construct corner and T-posts.
 6. Install a double top plate.
 7. Construct exterior walls and install corner braces.
 8. Install ceiling joists and strongbacks.
 9. Measure, cut, and install rafters and ridges.
 10. Lay out and install a roof truss.
 11. Install roof sheathing.
 12. Install roofing, felt, flashing, ridge vent, and asphalt composition shingles.

UNIT C: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO INSTALL EXTERIOR FINISHING

- 3 2 1 N
 ___ ___ ___ ___
1. Install exterior insulation, vapor barrier, and sheathing.
 2. Install exterior finish materials.
 3. Install doors and windows with flashing.

UNIT D: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO INSTALL INTERIOR FINISHING MATERIALS

- 3 2 1 N
 ___ ___ ___ ___
1. Install doors and locks.
 2. Install shelving.

UNIT E: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO CONSTRUCT FOOTING AND FOUNDATION WALLS

- 3 2 1 N
 ___ ___ ___ ___
1. Lay out building site and set up batter boards.
 2. Square building corners and mark

- ___ ___ ___ ___
3. excavation lines.
 3. Pour concrete footing.
 4. Set up mortar pan and mix ingredients for mortar.
 5. Lay a stretcher course to a line.
 6. Lay a full header course to a line.
 7. Lay a common bond wall.
 8. Construct a brick foundation wall.
 9. Tool the brick joints.
 10. Clean the brick wall.

UNIT F: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO INSTALL SWITCH AND OUTLET BOXES (NOT ENERGIZED)

- 3 2 1 N
 ___ ___ ___ ___
1. Install lighting circuits to be switched from one or more locations.
 2. Make electrical connections for lighting circuits.
 3. Install duplex and split circuit outlet circuits.
 4. Hang light fixtures from ceiling and bracket outlet boxes.
 5. Install a GFCI outlet.

UNIT G: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO WORK SAFELY ON ELECTRICAL CIRCUITS

- 3 2 1 N
 ___ ___ ___ ___
1. Demonstrate the ability to check for voltage on a circuit and to kill the power supply.
 2. Demonstrate the ability to use hand and power tools safely while working on an electrical system.
 3. Demonstrate the ability to recognize unsafe working conditions.
 4. Complete an electrical safety test successfully.
 5. Demonstrate the ability to use lock out/tag out.

UNIT H: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO APPLY THE NATIONAL ELECTRICAL CODE TO BASIC PRACTICAL PROBLEMS

- 3 2 1 N
 ___ ___ ___ ___
1. Define basic terms used in the

National Electrical Code.

- — — — 2. Size conductors according to Article 310.
- — — — 3. Size boxes according to Article 370.
- — — — 4. Demonstrate the ability to reference the codebook.

UNIT I: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO CUT AND JOIN PLUMBING PIPE

3 2 1 N

- — — — 1. Use hand tools to cut, clean, ream, and/or flare copper tubing.
- — — — 2. Use hand tools to cut and clean plastic and C/PVC pipe.
- — — — 3. Light, adjust, and use a torch to sweat copper tubing.
- — — — 4. Clean and join PVC pipe.

UNIT J: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO INSTALL PLUMBING SYSTEMS

3 2 1 N

- — — — 1. Rough in a water supply system.
- — — — 2. Install plumbing fixtures.
- — — — 3. Pressure test water supply system.
- — — — 4. Repair leaks in valves and lines.

UNIT K: DEMONSTRATING KNOWLEDGE AND SKILLS REQUIRED TO INSTALL DRAINAGE SYSTEMS

3 2 1 N

- — — — 1. Install a wastewater system for a bathtub, over-flow, and trap.
- — — — 2. Install a wastewater system for built-in lavatories.
- — — — 3. Install a wastewater system for a floor mounted water closet.
- — — — 4. Install a wastewater system for a double kitchen sink with a garbage disposal.
- — — — 5. Rough-in waste lines and vent stacks.
- — — — 6. Install cleanouts on wastewater lines.
- — — — 7. Calculate the slope requirements for wastewater lines.
- — — — 8. Pressure test wastewater lines.
- — — — 9. Clean obstructions from wastewater lines.