

# **Carpentry II Course Competencies**

## **Demonstrating Workplace Readiness Skills: Personal Qualities and People Skills**

1. Demonstrate positive work ethic.
2. Demonstrate integrity.
3. Demonstrate teamwork skills.
4. Demonstrate self-representation skills.
5. Demonstrate diversity awareness.
6. Demonstrate conflict-resolution skills.
7. Demonstrate creativity and resourcefulness.

## **Demonstrating Workplace Readiness Skills: Professional Knowledge and Skills**

8. Demonstrate effective speaking and listening skills.
9. Demonstrate effective reading and writing skills.
10. Demonstrate critical-thinking and problem-solving skills.
11. Demonstrate healthy behaviors and safety skills.
12. Demonstrate an understanding of workplace organizations, systems, and climates.
13. Demonstrate lifelong-learning skills.
14. Demonstrate job-acquisition and advancement skills.
15. Demonstrate time-, task-, and resource-management skills.
16. Demonstrate job-specific mathematics skills.
17. Demonstrate customer-service skills.

## **Demonstrating Workplace Readiness Skills: Technology Knowledge and Skills**

18. Demonstrate proficiency with technologies common to a specific occupation.
19. Demonstrate information technology skills.
20. Demonstrate an understanding of Internet use and security issues.
21. Demonstrate telecommunications skills.

## **Examining All Aspects of an Industry**

22. Examine aspects of planning within an industry/organization.
23. Examine aspects of management within an industry/organization.
24. Examine aspects of financial responsibility within an industry/organization.
25. Examine technical and production skills required of workers within an industry/organization.
26. Examine principles of technology that underlie an industry/organization.
27. Examine labor issues related to an industry/organization.
28. Examine community issues related to an industry/organization.
29. Examine health, safety, and environmental issues related to an industry/organization.

## **Addressing Elements of Student Life**

30. Identify the purposes and goals of the student organization.
31. Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.
32. Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.
33. Identify Internet safety issues and procedures for complying with acceptable use standards.

## **Applying Basic Construction Safety Standards (Core Safety)**

34. Comply with federal, state, and local safety legal requirements, including OSHA, VOSHA, and EPA.
35. Identify personal protective equipment (PPE) requirements.
36. Inspect and maintain a safe working environment.
37. Explain safe working practices around electrical hazards.
38. Identify emergency first aid procedures.
39. Identify the types of fires and the methods used to extinguish them.
40. Inspect course-specific hand and power tools to visually identify defects.

41. Demonstrate lifting and carrying techniques.
42. Demonstrate safe laddering techniques.
43. Demonstrate safe scaffolding techniques.
44. Report personal injuries, environmental, and equipment safety violations to the appropriate authority.
45. Pass a safety exam for shop/site safety and specific tool use.

### **Focusing on the Carpentry Profession**

46. Identify the responsibilities and personal characteristics of a professional carpenter.
47. Research local and regional opportunities in the construction industry.
48. Describe the interrelationship among professional entities common to the construction industry.
49. Communicate verbally and in writing, using construction terminology.
50. Identify communication technology and hand signals common to the construction site.
51. Measure materials, using a standard measuring device.

### **Using Hand and Power Tools**

52. Identify the basic hand tools and commonly used power tools used in carpentry.
53. Maintain hand and power tools.
54. Describe the safe use of nail guns.

### **Interpreting Blueprints**

55. Correlate information on blueprints to actual locations on the print.
56. Interpret drawing dimensions.
57. Describe the importance of the Virginia Unified Statewide Building Code (USBC), what it governs, and how to use it as a reference.

### **Identifying Basic Rigging Procedures**

58. Identify the use of slings and common rigging hardware.
59. Identify the basic inspection techniques and rejection criteria used for slings and hardware.
60. Identify the basic hitch configurations and their proper connections.
61. Identify basic load-handling safety practices.
62. Demonstrate American National Standards Institute (ANSI) hand signals.

### **Assembling and Fastening Components**

63. Identify nailing schedules for selected materials, according to local building codes.

### **Estimating and Selecting Materials**

64. Determine materials from a blueprint.
65. Estimate labor and material cost.
66. Determine the proper use of materials.

### **Building and Installing Foundations and Forms**

67. Set up a builder's level and a laser level.
68. Establish elevation points from a benchmark.
69. Install batter boards.
70. Identify types of footings.
71. Construct and align the foundation wall and wall forms to include pilasters and beam pockets.
72. Describe wall-framing techniques (e.g., block, poured) used in masonry construction.
73. Describe the installation of window and door jambs in masonry openings.
74. Describe form maintenance.

### **Framing a Floor**

75. Install the sill plate.
76. Install a solid or composite wood beam/girder.
77. Install the lally column (i.e., basement pole).
78. Assemble floor framing detail on the sill plate.
79. Assemble floor joists.
80. Frame the floor opening.
81. Install floor joists.
82. Install bridging and blocking.

83. Install subfloor sheathing.
84. Select subfloor framing fasteners and adhesives.

### **Framing Walls**

85. Lay out the floor deck for walls.
86. Lay out stud spacing on wall plates.
87. Cut and assemble studs, headers, jacks, rough sills, and cripples.
88. Assemble the corner and tee posts.
89. Assemble the header.
90. Frame the door opening.
91. Frame the window opening.
92. Assemble wall sections, including metal studs.
93. Install the double top plate (i.e., cap plate).
94. Install wall blocking (i.e., backing).
95. Describe the procedures and requirements for installing fire stops.
96. Install a corner brace.
97. Install exterior wall sheathing.
98. Raise a wall.

### **Framing a Ceiling**

99. Lay out ceiling framing detail on the top wall plate.
100. Cut ceiling joists.
101. Install the ceiling joists.
102. Frame the ceiling opening.
103. Install a strongback (i.e., stiffener or catwalk).

### **Framing a Roof**

104. Lay out roof framing detail on the cap plate.
105. Lay out the common, header, and cripple rafters.
106. Lay out a common rafter as a pattern.
107. Reproduce common rafters from a pattern.
108. Install the ridgeboard.
109. Frame the roof opening.
110. Install common rafters.
111. Frame a gable end.
112. Frame a blind valley (i.e., overlay valley).
113. Frame a gable dormer.
114. Frame a shed dormer.
115. Install the collar beams (i.e., rafter ties).
116. Install the purlins.
117. Install roof sheathing.
118. Frame a chimney saddle (i.e., cricket).

### **Installing Trusses**

119. Lay out a truss installation.
120. Describe the safe selection, setting, and anchoring of trusses by hand or by crane.
121. Brace the roof assembly.
122. Frame an opening in the roof assembly.

### **Installing Roofing**

123. Install roof underlayment.
124. Install valley flashing.
125. Install 3-tab composite shingles.
126. Install the ridge cap.
127. Install composite shingles in a valley.
128. Install composite shingles around the roof opening.
129. Identify attic area ventilators.

### **Constructing and Installing Straight (i.e., Basic) Stairs**

- 130. Calculate the rise and run for stairs.
- 131. Lay out a straight-run stair stringer.
- 132. Cut the stair components.
- 133. Construct the unfinished stair unit.

### **Installing Exterior Doors and Windows**

- 134. Install prehung exterior door units.
- 135. Identify types of exterior doors.
- 136. Identify types of interior doors.
- 137. Install the garage door and jamb.
- 138. Identify types of windows.
- 139. Install new-construction windows.

### **Framing Decks and Porches**

- 140. Install footings.
- 141. Identify superstructure of attachment.
- 142. Install ledger board, fasteners, wind bracing, joist hangers, and flashing.
- 143. Install posts.
- 144. Install a solid or composite wood beam/girder.
- 145. Install the deck joist.
- 146. Install decking material.
- 147. Install railings.
- 148. Identify types of decking materials.

### **Installing Exterior Finishes**

- 149. Construct a box and a rake cornice.
- 150. Install a fascia.
- 151. Install a soffit.
- 152. Install a corner board for siding.
- 153. Install siding and accompanying accessories.

### **Installing Interior Finishes**

- 154. Install gypsum board.
- 155. Install paneling and trim.
- 156. Install shelving.
- 157. Install baseboard.
- 158. Install ceiling molding.
- 159. Case an interior opening.
- 160. Install an interior door jamb.
- 161. Install a prehung interior door unit.
- 162. Install a sliding, bi-fold, swinging, or pocket door.
- 163. Install a cylinder lockset.
- 164. Install weather stripping.
- 165. Construct open shelving.