



## CARPENTRY



### PURPOSE

To evaluate each competitor's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of residential and commercial Carpentry.

### ELIGIBILITY

Open to active NYS SkillsUSA members enrolled in programs with Carpentry as the occupational objective.

### CLOTHING REQUIREMENTS

**NYS SkillsUSA Construction Attire:**

- White crew neck short-sleeved T-shirt
- work pants or jeans
- leather or steel-toed work shoes
- safety glasses or goggles, (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.)
- hard hat, nail apron without advertisement or printed name

**Note: Contestants must wear their contest clothing to the contest orientation meeting. Also bring #2 pencil, resume, and safety assurance form.**

## **SAFETY REQUIREMENT**

Both the instructor and the competitor certify by agreeing to enter this competition that the competitor has received instructions and has satisfactorily passed an examination on the safe use of a portable power saw. They also certify that the competitor's saw has been thoroughly inspected and is in safe working condition. Further, both the instructor and the competitor agree that SkillsUSA Inc., the NYS SkillsUSA Championships technical committee and judges are released from all responsibility and liability relating to personal injuries resulting from its use. Competitors will be removed from competition if proper training has not been provided and/or they are using the equipment in an unsafe manner.

## **EQUIPMENT AND MATERIALS**

1. Supplied by the technical committee:
  - a. GFCI's (Ground Fault Circuit Interrupters)
  - b. All lumber and materials, as specified on the job sheet
  - a. Job sheets and blueprints for each competitor and judge
  - b. All necessary information and furnishings for judges and technical committee
  
2. Supplied by the competitor:
  - a. Cut-resistant Level 3 gloves
  - b. Hard hat
  - c. Safety glasses
  - d. One 8 pt. crosscut saw (10 pt. or 12 pt. optional)
  - e. Claw hammer
  - f. One set of chisels (1/4" to 1")
  - g. Framing square
  - h. 16' or longer steel tape measure
  - i. Utility knife with standard blades
  - j. Two pencils
  - k. One each — 1 and 2 pt. Phillips and 4" and 8" standard screwdrivers or one multi-tip with equivalent tip
  - l. Wrecking bar or gooseneck pinch bar
  - m. Coping saw and extra blade
  - n. Cat's paw (nail puller)
  - o. Chalk box and line
  - p. One nail set
  - q. Straight aviation snip or any metal-cutting snips
  - r. 24" or 30" spirit level
  - s. Combination wood rasp and file (8")
  - t. Carpenter's tool and nail pouch with belt and/or suspenders
  - u. Stair gauges
  - v. Combination square and/or speed square
  - w. 25' power cord (UL approved grounded)

- x. Calculator
  - y. Power circular saw with new carbide-tipped blade
  - z. Drywall saw
  - aa. Portable toolbox not to exceed 4.0 cubic feet of storage capacity.
  - bb. Prefabricated Sawhorses
  - cc. Cordless Impact Driver w/battery and charger
  - dd. 4" Locking C clamps (Metal Framing Clamps)
3. All competitors must create a one-page resume. See “Resume Requirement” below for guidelines.

## **RESUME REQUIREMENT**

Competitors must create a one-page resume to submit at orientation.

## **DEVICES**

Cell phones or other electronic devices not approved by the NYS Chairperson will be collected by the contest chair during the competition. Chairpersons will announce their acceptance by listing it on their standard or at the orientation meeting. In case of emergencies advisors should allow the competitors to take their phones to the contest areas.

If the competitor uses their device in a manner which compromises the integrity of the competition, the competitor’s score may be penalized.

# **SCOPE OF THE COMPETITION**

## **KNOWLEDGE PERFORMANCE**

All competitors are required to take the NYS SkillsUSA professional development at orientation.

The competition will include a written test that assesses knowledge of carpentry including building materials, foundations and forms, rough framing, roof framing, exterior finish, interior finish, stairs, lumber, and tools.

## **SKILL PERFORMANCE**

The competition will assess accuracy, workmanship, the ability to read and interpret blueprints, and the proper use of tools and equipment. Competitors may be required to frame walls using wood and/or steel studs; cut and install common, hip and jack rafters; and install drywall, siding, sheathing, baseboard moldings and window trim.

## **COMPETITION GUIDELINES**

1. Time limit: Competitors will be stopped when time limits, as specified on the competition job sheet, are up; however, competitors may stop whenever they have completed a particular phase of the competition.
2. The dismantling of the project will be considered the final sequence or task of this competition.

*Note:* If desired, a competitor may choose to use a standard handsaw without penalties.

## **STANDARDS AND COMPETENCIES**

### **C 1.0 — Read blueprints and specifications by interpreting dimensions and specifications, as well as door, window and finish schedules while understanding common blueprint abbreviations and symbols**

- 1.1. Interpret and determine dimensions from multiple view drawings and build the project from plans, elevations, sections, and details
- 1.2. Interpret specifications and drawing notes by verbally demonstrating how specifications are used
- 1.3. Identify plot plan information such as reference points and benchmarks by locating the reference point; using Pythagorean theorem, a level and square, the participant can lay out building as drawn on the plot plan
- 1.4. Interpret oral and written changes, and incorporate modifications into existing plans
- 1.5. Understand common abbreviations and symbols, and verbally describe all common blueprint abbreviations and symbols on competition blueprints
- 1.6. Interpret door, window, and finish schedules by describing location, quantity, and type of materials

### **C 2.0— Organize building site/materials in a safe and sequential manner while using builder's level and transit properly**

- 2.1. Use builder's level and transit properly for layout and elevation
- 2.2. Identify, receive, and inspect materials and ensure all required materials are in place prior to start of competition by using material lists supplied
- 2.3. Store lumber and other materials properly by type and use in a safe and sequential manner

### **C 3.0 — Build foundations and forms including the construction and alignment of footing forms, wall and wall forms, and column and pier forms**

- 3.1. Construct and align various footing forms to include keyways, bulkheads, dowels, and anchorages, as per plans
- 3.2. Construct and align foundation wall and wall forms to include pilasters and beam pockets
- 3.3. Construct and align column and pier forms
- 3.4. Maintain form materials properly

**C 4.0 — Construct rough framing by identifying and selecting framing members, and installing frame components while meeting OSHA standards**

- 4.1. Identify framing members and select materials for project
- 4.2. Frame and install sill plate, girders, floor joists and bridging
- 4.3. Frame floor
- 4.4. Install sub-floor
- 4.5. Build or erect safe scaffolding to meet OSHA standards
- 4.6. Frame and brace walls to include corners, openings, trimmers, cripples, partitions, plumbing partitions, fixture backing and sheathing
- 4.7. Frame stair stringer and other components

**C5.0— Construct roof framing by determining rafter lengths, making calculations, laying out a plan, framing and installing roof sheathing**

- 5.1. Identify types and components of roof construction and verbally describe all typical components of roof construction identified on the competition project blueprint
- 5.2. Determine rafter lengths from a rafter scale
- 5.3. Calculate and use the rise and run of a common roof
- 5.4. Lay out a common roof plan
- 5.5. Lay out, cut, and install common rafters, ridge board, collar ties, gambrel rafters, valley rafters, valley jack rafters, tail rafters, hip rafters, hip jack rafters and cripple jack rafters
- 5.6. Frame roof openings, dormers, and saddles
- 5.7. Lay out, cut, and install roof trusses (purling)
- 5.8. Install roof sheathing

**C 6.0 — Construct exterior finish by installing frames, corner boards, moldings, cornices, siding, and shingles as per industry standards**

- 6.1. Install window and doorframes as per competition project blueprint and manufacturer's standards
- 6.2. Measure, cut and install trim for window and door frames
- 6.3. Install corner boards, moldings, or metal/vinyl corners within 1/8"
- 6.4. Install wood, bevel, sheet and lap siding and aluminum or vinyl siding as per competition project blueprint and manufacturer's recommendations
- 6.5. Install wood shingles and miter corners as per industry standards
- 6.6. Install exterior finish rake, open cornice, and box cornice as per competition project blueprint

**C 7.0 — Construct interior finish while measuring and cutting materials, fitting, and hanging doors and trim, constructing closets, and installing crown moldings**

- 7.1. Measure, cut and install gypsum board to meet blueprint specs and industry standards
- 7.2. Cut and install paneling while trimming to fit in prescribed locations
- 7.3. Fit and hang doors and trim to include swinging, sliding, folding and pocket doors to industry and manufacturers' standards
- 7.4. Construct closets and built-in units and install accessories as per competition blueprint specs and manufacturers' recommendations
- 7.5. Cut and install crown molding or other moldings within 1/16"

**C8.0—Build stairs by laying out stringer and stringer sets, calculating rise, run and tread cutting and installing stair treads and stair skirts**

- 8.1. Lay out a straight run stringer and a two-flight stringer set with landing using a carpenter square
- 8.2. Calculate rise, run, and tread width within 1/16"
- 8.3. Cut and install stair treads and stair skirt within a 1/8" variable

**C 9.0 — Identify lumber by writing a requisition for ordering lumber**

- 9.1. Match letters designating uses in plywood or composition board to their current application
- 9.2. Match at least two examples each of common hardwoods and softwoods to their uses
- 9.3. Identify types of trim and moldings, and describe use
- 9.4. Identify common defects in lumber
- 9.5. Write a requisition for ordering lumber based on a given material list
- 9.6. Calculate board feet using the standard formula (no. of pieces x thickness in inches x width in inches x length in feet ÷ 12 = board feet)

**C 10.0 — Using and maintaining tools safely per manufacturers' recommendations**

- 10.1. Inspect and properly use hand tools as per manufacturers' recommendations. Hand tools from the following list: sliding T-bevel, tape measure, combination square/speed square coping saw, keyhole saw, folding rule, hammer, punch, hand saw, nail set, wood chisel, carpenter's level, and framing square
- 10.2. Inspect and properly operate power tools as per manufacturers' recommendations. Power tools from the following list: reciprocating (jig saw), miter saw, hand drill, belt sander, circular saw, sabre saw, table saw, finish sander and hand router