

**2019 SkillsUSA**  
**Electrical Construction Wiring**  
**Scope of the Contest**

Instructors, please share this with your competitors. The 2019 electrical construction wiring projects were designed to be challenging, yet not impossible to complete.

The conduit bending project consists of the basic bends necessary for almost every “real life” project. The competitors will be required to mount three 4X4 metal junction boxes at given measurements from the floor and the edge of the plywood wall. After the boxes are mounted, three pieces of conduit will be bent (per the diagram) to interconnect the boxes. Two pieces of ½-inch EMT will be provided and should be adequate, but since mistakes happen, an additional piece of EMT will be available. There will be no penalty or deduction for the additional piece of EMT. The bends consist of a 3-point saddle, box offsets, and 90°. The conduit will be attached to the plywood using 1-hole straps.

The wiring method portion of the contest consists of a four-way switch arrangement (switched from three locations), GFCI receptacle and a switched receptacle. The layout and measurements and are provided for the locations of the switch/receptacle boxes. A single light fixture will be switched at the end of the four-way arrangement (power originates at the beginning). The feeds for the switches and receptacles originate in a 4X4 junction box to be mounted per the diagram. Scoring will be based on neatness, accuracy of measurements and following NEC codes.

In addition to the practical contest, a written exam consisting of 30 questions will be given. The questions are from the 2017 NEC. Below is a typical question:

**Services** Minimum Size. The conductors shall not be smaller than \_\_\_\_ AWG copper or \_\_\_\_ AWG aluminum or copper-clad aluminum.

- a. 8, 6
- b. 2/0, 4/0
- c. 10, 12
- d. 4,6

Even though there are no calculations on the written exam, I recommend bringing a calculator for the conduit bending portion. It is also good practice to bring a calculator to any test, it is better to have and not need.

Additional Items:

- Instructors will be given 10-minutes with the competitor (if desired) at their work station prior to the commencement of the contest to discuss a strategy. Please do not unpack the supplies until instructed.
- A viewing area will be provided for instructors, parents and other spectators. Photographs of your competitor are welcome (if it doesn't bother them). Please ask a contest official to assist you.
- The competitor may ask questions. If the official feels the question is acceptable and does not give an unfair advantage, they may answer it. It doesn't hurt to ask!
- If the competitor is missing any material, please let an official know.
- If time permits at conclusion of the contest, competitors may review their projects with an official.
- Other guidelines may be presented at the competition.

I look forward to seeing everyone. Please look for me and spend a few minutes to discuss any comments or suggestions to improve the competition.

Thank you,  
Sam Landis