



Technical & Trade Contests

Electrical Construction Wiring

Contestants are required to complete a written test of questions formulated from the latest edition of the National Electric Code (NEC), a practical conduit bending exercise and hands-on installation of a conduit system, cabling system and wiring devices. Working from drawings and specification sheets, contestants are required to install an electrical system common in most residential and light commercial projects. Judging is based on general workmanship, accuracy of layout and installation, and adherence to the current NEC and standard industry safe practices. (3 students per school)

Contest Advisors: ron.gruenes@dctc.edu | 651-423-8563 | mike.buck@dctc.edu | 651-423-8494

Engineering Technology/Design

A team of three students demonstrates their ability to design an innovative engineering project and present those ideas along with a display and live model. During the presentation, students are judged on their performance as a professional team, presentation of their project to a panel of judges from the engineering field, their storyboard presentation model, and the overall effect of the presentation. (2 teams of 3 per school)

Industrial Motor Control

Students demonstrate their knowledge of electrical principles, equipment and industry codes and standards as it relates to the design and installation of motor control systems. Students demonstrate their skills and abilities in applying that knowledge by properly installing motor control equipment and associated enclosures, raceways, pilot devices and circuitry in accordance with accepted industry practice and National Electric Code requirements. (3 students per school)

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Job Interview

Divided into three phases: completion of employment applications; preliminary interviews with receptionist; and, in-depth interviews, contestants are evaluated on their understanding of employment procedures faced in applying for positions in the occupational field they are training. (unlimited students per school)

Job Skill Demonstration A

Contestants demonstrate and explain an entry-level skill used in the field they are training. Competitors must demonstrate a skills in one of the contest SkillsUSA contest areas. (4 students per school)

Related Technical Math

On a written test, contestants demonstrate skills required to solve mathematical problems commonly found in the skilled trades and professional and technical occupations. Skills demonstrated include addition, subtraction, multiplication and division of whole numbers, fractions and decimals; applied word problems; percentages; ratio proportions; averages; area; volume; metric measures and traditional (Imperial) measures and trigonometry. (5 students per school)

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Welding

Competitors receive contest drawings and a set of welding procedure specifications. All drawings, welding symbols, and welding terms conform to the latest edition of the American Welding Society standards. Through a series of stations, contestants are tested on various aspects of welding: measuring weld replicas, using weld measuring gauges; laying out a plate and using oxy-acetylene equipment to cut several holes that are checked for accuracy and quality; Gas Metal Arc Welding (GMAW) on steel making welds in various positions using short circuiting transfers; Flux Cored Arc Welding (FCAW) using a shielding gas, making welds in various positions and, using a combination machine capable of providing the correct welding current for shielded metal arc (SMAW) and gas tungsten arc welding (GTAW). Competitors complete the steel project and weld an aluminum project in various positions using a variety of filler metals. (3 students per school)

Welding Art/Sculpture

Contestants demonstrate their ability to design and produce a sculpture of that design, as well as give a presentation regarding all aspects of his/her creation of the design. Previously welded sculptures created for regional and state competitions will be displayed for the national competition. A notebook is required displaying evidence of original work. Each participant is interviewed regarding aspects of design and creation of the piece. There will be no live welding on site.

Technical Drafting

This contest evaluates contestant's preparation for employment and recognizes outstanding students for excellence and professionalism in the field of technical drafting. The contest will focus on the solution of industry-developed problems by applying appropriate technical drafting skills and tools including computer-aided drafting (CAD).