Automated Manufacturing Technology

SkillsUSA ILLINOIS

Career Competition

Career Cluster: Manufacturing/STEM

State Qualifying Exam: No   **National Contest:** Yes   **Participation:** Teams of 3

Competition Description
This competition evaluates teams for employment in integrated manufacturing technology fields of computer-aided drafting/ design (CAD), computer-aided manufacturing (CAM), and computer numerical-controlled machining (CNC). CAD operators construct the part geometry, the CAM operator generates the tool paths, and the CNC operator sets up and machines the part. Plotting is not a scored event; however, the competitors must be able to generate a plot file that will be used to send their data to the plotter.

Tasks To Be Evaluated
Tasks performed are those typical for CAD design, toolpath creation using CAM software, and setup of a Tormach PCNC 440 Milling machine. Students will work together, determining their approach to satisfy the needs of the customer and the product being manufactured.

Clothing Requirement

National Requirement:
Class C: Competition Specific: Manufacturing/ Construction Khaki Attire
- Official SkillsUSA khaki short-sleeve work shirt
- Khaki pants
- Black, brown, or tan leather work shoes.

State Requirement:
National Requirement OR
- Khaki short-sleeve work shirt
- Work pants of any kind are acceptable dress (no jeans)
- Black, brown, or tan leather work shoes.
- Any embroidered names or school patches must be covered, if applicable.

Additional Information
A very good working knowledge of at least one of the skills listed, by each team member. That is, each student should have one skill minimum, different from the other team members. Additional competency in each of the other two skills will help the team work more smoothly and quickly.

Provided by Competitor
- Each team must have (2) computers with their chosen CAD and CAM software. Said software must be capable of functioning as a stand-alone system, without access to any internet or network connections.
- At least (1) printer is required, and may be cabled or wireless.
- Engineering calculators are also required; use of tablets, I-phones, Smart phones, etc are not allowed.
- Resume from each member of the group.

Provided by Technical Committee
- SkillsUSA will provide all contest documents, and a work space with power for computers and printers. SkillsUSA does NOT provide and computers or printers. SkillsUSA will also provide a Tormach PCNC 440 Milling Machine for use to produce a machine part or assembly. SkillsUSA does NOT provide any software needed to compete. Internet and/or WIFI are also NOT provided to the teams.