

**Missouri
SKILLS USA**

2012

**Automated Manufacturing
Technology
Skills Contest**

**Hosted By:
East Central College**

Located at Four Rivers Career Center

Skills USA State Competition 2012 Automated Manufacturing Technology Contest

Contest Objective:

To evaluate a contestant's preparation for employment in Automated Manufacturing Technology.

Pre-Contest Meeting & Contest Specifics:

Date: Friday, March 30

Time: 9:00 a.m. – Completion

Location: Four Rivers Career Center Washington, MO

Conference Transportation Arrangements:

Departure Location: Linn State Technical College, Information Technology Center (1) – Parking lot

Departure Time: 8:00 a.m.

Return Time/Location: Completion of contest/LSTC

Clothing requirement:

Appropriate job related clothing to match industry standards

Leather work shoes to match industry standards

Team members will have the same style of work shirt with no school logos or other affiliation to schools

Safety glasses with side shields to be worn at all times thru out contest

(Note: No shorts, open-toed shoes or mid-ribs exposed)

Contest Guidelines

All competing Skills USA team members of the Automated Manufacturing competition@ LSTC will report to proper location at proper times or be disqualified from competition if tardy.

Competing teams will be composed of three members: A CAD operator constructs the part geometry, a CAM operator to generate tool paths, and the CNC operator will set up and machine the parts.

Cell phones, cameras, and personal music devices will not be allowed inside the contest area during the competition. Use of any of the stated devices can result in team disqualification at the discretion of the judges.

One person will not dominate a team by doing the CAD drawing, the CAM tool path, or running the CNC machine while using the other members simply as support. Each team member will have only one of the 3 specific tasks to perform.

Teams will have 30 minutes to set-up their computer equipment.

Teams will be presented with tooling and dimensioned drawings of parts to produce when the competition is scheduled to begin.

The CNC operator will be directed to where they may perform their tool set-up portion of the competition.

The CNC operator must remain at the assigned machine when the machine tool is in operation. Failure of compliance of any safety rule can result in team disqualification at the judges' discretion and or reduction in final team score.

Judges will monitor all portions of the competition.

When time is called, the teams will present to the judges in a timely fashion: all documentation required for the competition & parts with contestants number written on parts with a permanent marker provided by the judges for evaluation. The judges will advise the teams on the proper area on the finished part to write the team number.

If a team is finished before the scheduled finish time, the team must leave the contest area after turning in all required documentation and parts as stated above. The team will then return at the scheduled finish time to remove their equipment. No equipment is allowed to leave the contest area during the scheduled contest time.

Materials Supplied by Contestants:

- ___ 6" caliper (digital or dial)
- ___ 6" or 12" file
- ___ Calculator
- ___ Safety glasses with side shields (*to be worn at all times while competing*)
- ___ Several pencils
- ___ One page, typewritten resume (due at Pre-Contest meeting)
- ___ Two computers: One computer loaded with CAD software; One computer loaded with CAM software
- ___ Computer Printer
- ___ Vise Parallels (full set)
- ___ Edge finder
- ___ Feeler gages or Shim set
- ___ Power strip
- ___ Test indicator with 3/8" shank
- ___ Soft face hammer
- ___ 10" adjustable wrench

Materials Supplied by the Technical Committee:

- Vertical Machining Center w/ vise
- Machine operating manuals
- Part Material for pre-contest & contest
- End mills
- Paper
- 2 Flash drives (to be return to judges upon contest completion)
- Tables & chairs

Contest Notes:

Only HAAS machines will be available for the contest. Please visit www.learnhaascnc.com or www.haasautomation.com.

A viewing area will be roped off within the contest area. NO ONE will be allowed past this area except contestants, judges, and committee members. Thank you for your cooperation.

If a technical problem should arise w/ any equipment malfunction during the contest, the contestant should notify the acting chairman or a judge. If it is decided from that a malfunction has actually occurred, time will be stopped from that teams allotted time and the malfunction will be reconciled or an alternate piece of equipment will be used for the time that is remaining for the contestant.

Problem Secondary Contest Information:

Your company specializes in rapid prototyping. Your company is working closely with a customer that is an entrepreneur that is seeking a patent for a machine to make widgets. Your company is required to manufacture the part to the print that will be provided by the customer. The part must be within the print tolerances that are stated. The material that is being used very expensive and any scrap will cause your company to lose all profit on the prototype. The print that is provided must also be redrawn so your company can be paid for your services. The part and documentation is being submitted for patent approval that has to be submitted by the end of the day. If your documentation and part are acceptable to the customer, you will be rewarded with a contact to manufacture this part and other components for the widget machine.

Problem Post Secondary Contest Information:

Your company is a finalist for a contract to make assemblies for a large electronics company. The Research and Development department from the prospective customer has provided material and drawings of the part. The material is an exotic material and you only have enough to complete the project. You must machine the parts to the dimensions provided on the print and must do this within the tolerances given or the customer will not pay you for your service. The customer is also looking at you for help with designing other components for this and other assemblies. They will require you to remake the drawing that is provided. The owner of your company wants this project completed and shipping to the customer by the end of today to leverage you ahead of your competition.