



## **CNC Technician, Milling, and Turning**

### **2022 SkillsUSA Michigan State Championships**

#### **Contest Description**

#### **Task and Materials List**

##### **CONTEST LOCATION:**

Grand Rapids Community College  
Applied Technology Center (ATC)  
151 Fountain NE  
Grand Rapids, MI, US  
(616) 234-GRCC  
<http://www.grcc.edu/>

##### **PARTS DUE March 25th**

##### **INSPECTION LOCATION:**

Delta Schoolcraft ISD  
CO: Darrell Mullins Jr.  
2525 3<sup>rd</sup> Avenue South  
Escanaba, MI 49829

##### **RESUME:**

Each student must submit a one-page printed resume before the contest start at the contest site (present to contest coordinator, not judges). The resume is no longer submitted online. This is the only time that resumes can be turned in. Failure to do so will result in a 10 point penalty.

##### **Competition Guidelines:**

- Each Chapter is allowed two competitors in each area.
- There is no regional competition.
- Each competitor will report to competition area Saturday morning at 8:00 a.m., wearing khaki shirt, blue jeans, work boots, and safety glasses. This dress code will be strictly enforced with a 15 point penalty for failure to meet it.
- Any Geometry producing Calculator is not allowed, all others are acceptable.
- Competitor's instructor or advisors must accompany them to the competition area. Instructors/advisors will be involved with the monitoring of the Google Form tests, and working with students to interrogate their part in CMM report.

## CONTEST INFO:

This year all 3 contests will consist of a part or parts your student makes on your machine in your shop or at his/her co-op work station under your supervision. The **parts and a printed copy of program will then be sent to the address mentioned above for inspection** by an industry leader in the Escanaba area on their CMM machine. The parts will be brought (by me) to the competition for the instructors and leaders to give back to the students. They will be able to interrogate how they did on the parts this year.

The students will also be taking the multiple Google Forms tests to include the following information

Shop Math with Student Ready Reference or Machinery's Handbook  
Blue Print Reading Lathe or Milling Specific, both for CNC Technician  
Program writing G-code Google Form test will also be given.

5 station Inspection test: Depth Micrometer test

Telescoping gage bore inspection  
Thread measuring with Thread pitch Micrometer  
Diameter and Length with Micrometer and 6" scale  
Diameter and Length with Digital Caliper

Any Geometry producing Calculator is not allowed, all others are acceptable. Students are to be wearing Khaki shirt, Jeans, leather work boots/shoes and have safety glasses. Failure to meet these requirements will result in a -15 point penalty.

The CNC Technician contest will be the same problems as the CNC Milling and CNC Turning contest. The time to produce the Milling part and the Turning part will be the same and combined for the Technician contest. Example: CNC Milling 6 hours and CNC Turning 6 hours. The Technician contestant will have 6 hours for Milling and 6 hours for turning. Time not used in one area CANNOT be carried over to the other.

The contest part may be produced on any machine, G & M code or Conversational. Canned cycles are allowed but not Intuitive or CAM produced programs. A G & M Code program MUST accompany the part! If you have any questions about this call me at 906-399-7138. Any material that is dimensionally sound is allowable. Any scraped part /restart will result in a -5pt penalty.

Scoring will be based on 50% the Part inspection and 50% the Tests. Everything we are covering in this contest is similar to the National contest except they don't produce a part.

I want to remind everyone that we are on the Honor System with how the contest is run. We have now done this for a couple of years and this system is working. The work time for the Turning or Milling part will be 6 hours. The producing of the initial blank is not part of the 6 hours; all setup is part of the 6 hours.

These parts are very similar to previous year's National contest problems, boring on the Lathe and Tapping on the Mill is included. Both parts should be able to be completed in the allotted time.

# CNC Milling Scorecard

Items Evaluated	Possible Points	Contestant Number						
		1	2	3	4	5	6	7
Conformity to Print	200							
Dimensions	750							
Written Test	50							
Résumé Penalty	0 to -10 only							
Clothing Penalty	Up to -50							
Additional Material	-10 pts each time part height is reduced by .2							
Workstation Dirty	Up to -50							
<b>Total Possible Points</b>	<b>1,000</b>							

# CNC Turning Scorecard

Items Evaluated	Possible Points	Contestant Number						
		1	2	3	4	5	6	7
Conformity to Print	200							
Dimensions	750							
Written Test	50							
Résumé Penalty	0 to -10 only							
Clothing Penalty	Up to -50							
Additional Material	-10 pts each time part height is reduced by .2							
Workstation Dirty	Up to -50							
<b>Total Possible Points</b>	<b>1,000</b>							