



## 2020 State Contest

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### CNC MILLING SPECIALIST

#### Description

1. **Written Test:** The contest will include a written test evaluating a contestant's knowledge of Computer Numerical Control machining in such areas as basic machining skills, CNC programming, setting up a CNC machine, performing mathematical calculations related to CNC, communication, and inspection.
2. **Hands-on skill competition:** The contest will assess the ability to write the CNC program for a part drawing and materials, determine tool offsets, set up the machine and produce a part.

*Note: Please check the SkillsUSA National website for updated contest information and the SkillsUSA National Technical Standards*

- [SkillsUSA Championships Technical Standards](#)
- [Contest Updates](#)

#### Clothing Requirements

Class C: Contest Specific — Manufacturing/Construction Khaki Attire

- Official SkillsUSA khaki short-sleeve work shirt and pants
- Black, brown or tan leather work shoes

Note: Safety glasses must have side shields or goggles (prescription glasses may be used only if they are equipped with side shields. If not, they must be covered with goggles).

[Clothing Classifications](#)

#### Contest Guidelines

The core elements to be tested are:

- CNCM 1.0 — Apply basic machining skills per industry standards as set forth by the SkillsUSA technical committee
- CNCM 2.0 — Demonstrate knowledge of CNC programming per industry standards as set forth by the SkillsUSA technical committee

*All SkillsUSA California contest projects are subject to change due to any unforeseen facility, staffing or site-related issues. Please use these materials as a reference to prepare students for the potential contest project. SkillsUSA California regional and state contest projects are developed by state technical committee members to align with the national technical standards.*



- CNCM 3.0 — Perform mathematical calculations as needed for calculating speeds, feeds, program coordinates, angles, radii, and tangent points
- CNCM 4.0 — Communicate and demonstrate an understanding of all symbols on a blueprint
- CNCM 5.0 – Inspect work per industry standards as set forth by the SkillsUSA technical committee

### **Equipment and Materials**

#### **Supplied by Contestants**

- Non-programmable calculator
- Pencils and paper
- Machinery's Handbook (optional)
- One page, typed resume

#### **Supplied by SkillsUSA**

- 40 - Access to CNC Simulation software such as LearnCNC from [www.immerse2learn.com](http://www.immerse2learn.com) (trial seats no cost for 6 months)
- 1 (minimum) – Computer to run simulation software Haas Simulator (Must be proficient before the competition)

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