AUTOMATED MANUFACTURING TECHNOLOGY
(Virtual)

Contest Description

This contest evaluates teams skills and abilities for entry-level employment in integrated manufacturing technology fields utilizing 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 contestants must be able to generate a plot file that will be used to send their data to the plotter. Contestants will submit a 5-7 minute video demonstration in lieu of an in-person competition.

Regional Competition

Demonstration video(s), Resumes (for each team member), and a team Engineering Notebook must be submitted to SkillsUSA California by **February 20, 2021**. Information to upload will be sent to the contestants advisor by December 18, 2020.

Teams of three should be able to demonstrate the following:
1. Ability to use a simulated CAD/CAM program.
   a. This will be a virtual contest. No videos of live CNC equipment will be allowed.
2. Ability to program the software.
3. Provide documentation of design process (including flowchart) and programming involved with the CAD/CAM demonstration.
4. Ability to answer questions about the documentation, programming, and use of the CAD/CAM software.
5. A copy of <u>each</u> participant's resume (PDF) to be submitted to SkillsUSA.

Notes:
1. Each team will use screen-casting software to demonstrate the programming of the CAD/CAM simulation. Acceptable programs include Screencastify, Loom,

Camtasia, and others. Teams will upload the video into YouTube and provide a link to the video with the other submissions.

2.   Each video submitted must also be narrated by each of the team members, each narrating their own part of the process (design, toolpaths, machining). The narration will include demonstration of the software, including its programming.

3.   Each video must be 5-7 minutes long. A penalty will be assessed for videos that are too long or too short.

4.   Each member, as stated above, will narrate their own part of the process.

    A   The first member will demonstrate how the part was made using CAD software.

    B.   The second member will demonstrate how the toolpaths are generated using CAD software.

    C.   The third member will demonstrate how the machining will be done, using a CAD/CAM software program or online simulator

Contestants will submit a five to seven minute (5-7 min.) screen-casted video and All PDF's of Engineering Notebook and/or notes and flowcharts to SkillsUSA. – The video must contain the following:

    a.   Show flowchart in notes (notebook) – convert to pdf to allow showing on video.

    b.   Demonstrate the basics of the software.

    c.   Demonstrate how to program the simulation.

    d.   Run the simulation, narrating if necessary.

Student Materials List

1. One-page Resume ([SkillsUSA format](#))
2. Demonstration Video (5-7 Minutes)
3. All PDF's of engineering notebook and/or notes and flowcharts.

Clothing Requirements

SkillsUSA Official Dress is NOT required for Regionals. Clothing must be unbranded with no
words, images, or logos. SkillsUSA or SkillsUSA California attire is recommended.

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.

Regional 2020-2021 Contest Catalog

Note: Check the National Contest Guidelines and/or the updates page on the SkillsUSA website and the SkillsUSA California Competitive Events page:

- **www.skillsusa.org/compete/updates.shtml**
- **https://www.skillsusa.org/competitions/skillsusa-championships/contest-descriptions/**
- **https://www.skillsusaca.org/competitive-events-2**