



CNC Programmer

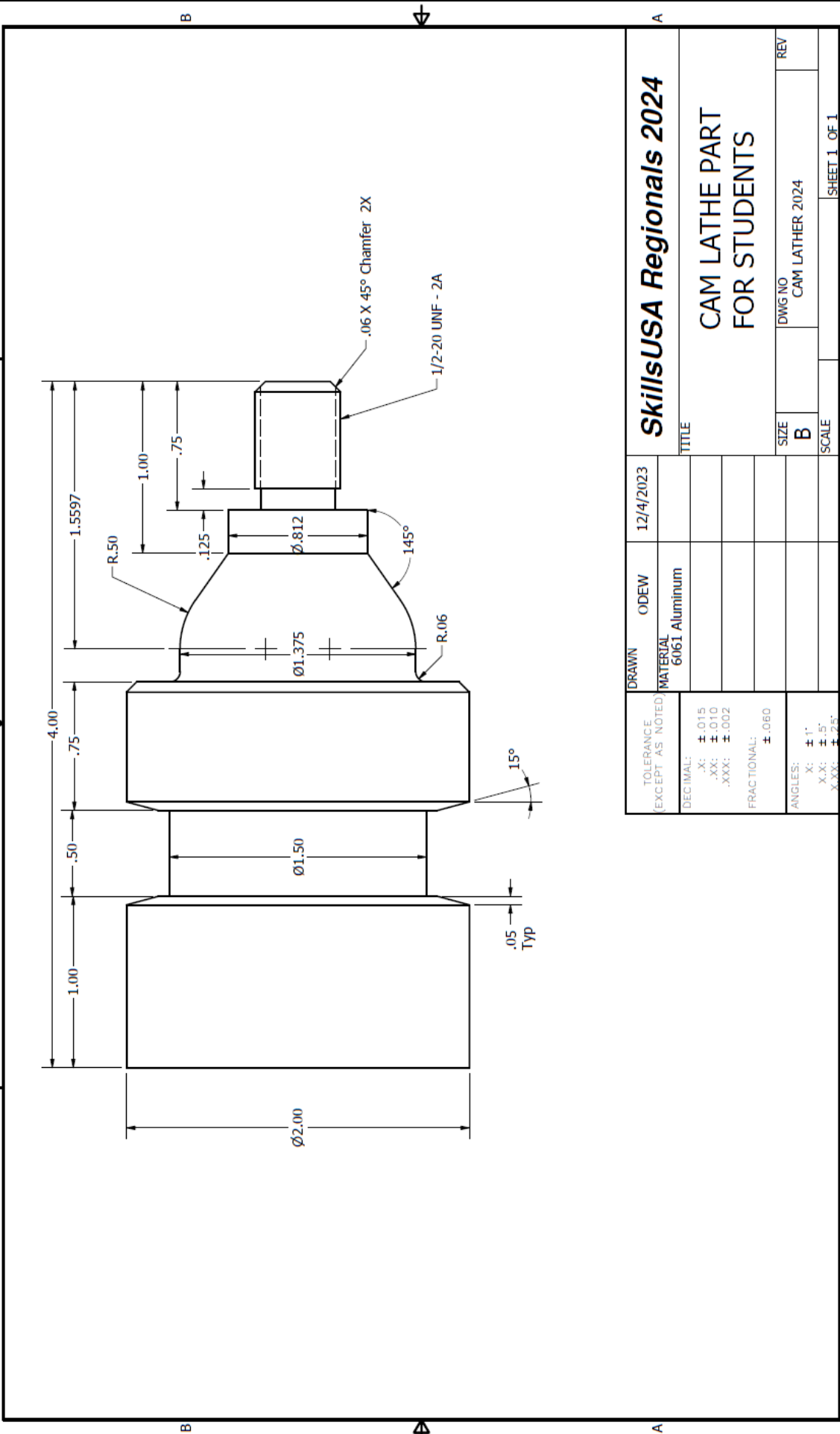


revised 1/13

Date	February 16, 2024 Snow Date – February 20, 2024	Orientation Time	10:45 AM (CLOSED to instructors)
Location	Vantage Career Center 818 N. Franklin Street Van Wert, OH 45891	Contest Time	Immediately Following Orientation (CLOSED contest)
Scope of Contest	<p>This competition will assess the ability to program CNC milling machines and turning centers and interpret prints (including GDT). Competitors also will demonstrate theoretical knowledge of CNC machine configuration, setup, and operations.</p> <p>Prior to competition: Each student should first create 3D models of the prints located at the end of this document.</p> <ul style="list-style-type: none"> • After completing the models the student should use the models to create tool paths in the cam software of their choice. • After successfully posting the code student should then create a tooling list, process plan, and a set up sheet for each part. • The student should then use all the materiel that they have made to make the parts on machines at their facility. • The student is to produce printed copies of the tooling list, process plan, set up sheet, nc program, and 3D model. • Student should have the finished parts with them as well on the day of the contest. • The parts and files will be inspected by the judges day of competition. <p>At competition: Competitors will present their parts and printed files to the judge(s) and be prepared to answer questions. Competitors will perform a g & m code programming exercise and will have access to a part drawing, operation sheet, tooling list and an NC code template file. The NC code template file is incomplete, and it is the competitor’s job to use provided documents to complete this NC code file so that if run, the program would produce a machined part that is accurate to the part drawing provided. The drawing will be complete with multiple views making it easy for competitors to visualize the part and understand its geometry. The operation sheet will provide a sequence for each operation as well as basic tooling information and instruction.</p>		
Testing	No		
Eligibility	1 contestant for every 50 paid members enrolled in program		

<p>Clothing</p>	<p>Work Attire: Field specific work clothing required for the work environment or that matches the service conditions for the contest. This may include jeans if they are clean and professional looking and are accepted in the respective field (no holes or overly soiled pants). Work shoes or boots with a hard sole or anti-slip properties (steel toes may be required – refer to Provided by Contestant section below). Clothing should be as such that it will not get caught in moving equipment or power tools. School uniforms may be worn if they meet the above requirements with all identifiers covered.</p>	
<p>Provided by Contestant</p>	<ul style="list-style-type: none"> • Professional Resume – must be typed and physically produced as a hard copy. • Emergency Medical Form (Contestants must have this to compete) • Pen or Pencil • Haas Simulator or Laptop, or computer with access to text editor (I,e Note pad or Word Pad). • Non-programmable calculator • NEW – Parts manufactured at competitor’s facility and printed copies of all elements listed under Prior to Competition section in Scope of Contest above. <p>Provided at site: Hard copy of resource materials to use during contest, plain paper for notes and calculations.</p> <p>Disqualifications: Cell phone in competition area, smart watches.</p>	
<p>Contest Standards</p>	<p>Contest Skilled Performance Standards</p> <p>CNCTECH 1.0 - Apply basic machining skills per industry standards as set forth by the SkillsUSA technical committee.</p> <p>CNCTECH 2.0 - Demonstrate knowledge of CNC programming per industry standards as set forth by the SkillsUSA technical committee.</p> <p>CNCTECH 3.0 - Perform mathematical calculations as needed for calculating speeds, feeds, program coordinates, angles, radii and tangent points.</p>	<p>Aligned ODEW Manufacturing Career Field Technical Content Standard Outcomes</p> <p>Outcome 6.1 Measurement and Interpretation</p> <p>Outcome 6.2 Layout and Planning</p> <p>Outcome 6.9 Computer Numerical Control (CNC)</p> <p>Above Outcomes can be found in the following ODEW courses:</p> <p>176006 Machining with Industrial Milling Machines</p> <p>176007 Computer Numerical Control Technology with Industrial Mills and Lathes</p>

1 2 3 4



SkillsUSA Regionals 2024		DATE	12/4/2023
TITLE		DRAWN	ODEW
CAM LATHE PART FOR STUDENTS		MATERIAL	6061 Aluminum
SIZE	B	DWG NO	CAM LATHER 2024
SCALE		REV	
TOLERANCE EXCEPT AS NOTED:		DECIMAL:	
.X: ±.015		.XX: ±.010	
.XXX: ±.002		FRACTIONAL:	
		±.060	
ANGLES:		X: ±1°	
X.X: ±.5°		X.XX: ±.25°	

