



Contest Description

Edmonton Expo Centre, Edmonton

May 8 & 9, 2024

EVENT: CNC Machining	LEVEL: Post-Secondary														
WORLDSKILLS TRADE #: 06	LOCATION: Hall C, Edmonton Expo Centre, Edmonton														
DURATION: 12 Hours (over 2 days)															
COMPETITION SCHEDULE:															
May 8:	May 9:														
<table border="1"> <tr> <td><i>ORIENTATION</i></td> <td>8:00AM-9:00AM</td> </tr> <tr> <td>COMPETITION</td> <td>9:00AM-NOON</td> </tr> <tr> <td>LUNCH</td> <td>12:00 NOON-1:00PM</td> </tr> <tr> <td>COMPETITION</td> <td>1:00PM-4:00PM</td> </tr> </table>	<i>ORIENTATION</i>	8:00AM-9:00AM	COMPETITION	9:00AM-NOON	LUNCH	12:00 NOON-1:00PM	COMPETITION	1:00PM-4:00PM	<table border="1"> <tr> <td><i>COMPETITION</i></td> <td>8:00AM-11:00AM</td> </tr> <tr> <td>LUNCH</td> <td>11:00AM-NOON</td> </tr> <tr> <td>COMPETITION</td> <td>12:00 NOON-3:00PM</td> </tr> </table>	<i>COMPETITION</i>	8:00AM-11:00AM	LUNCH	11:00AM-NOON	COMPETITION	12:00 NOON-3:00PM
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*Please Note: This document is subject to change as competition information is updated. Competitors are responsible for staying up to date with the most recent information. Check the footer for the last updated date. Changes will be highlighted in **yellow**.*

CONTEST INTRODUCTION

A CNC machinist programs and operates automated machine tools to make products from raw material for various industries. Nearly all consumer goods have been machined or are manufactured from tools or equipment which have been manufactured by a machinist.

SKILLS AND KNOWLEDGE TO BE TESTED

The competition will take place over two days (six hours of competition per day). Each day will consist of five hours of machining and a one-hour theory exam. Theory exam will cover milling and turning separately (one per day). The machining component of the competition involves machining a turning project on a CNC turning center and a milling project on a CNC machining center. Contestants will be required to read and interpret engineering drawings, use CAD/CAM software to program machine tools, and machine a precision component on a CNC machining center or CNC turning center using appropriate machining operations.



PROJECT DESCRIPTION

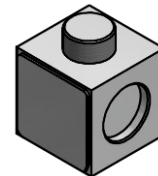
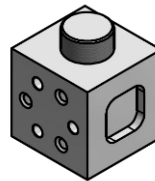
CNC Turning Centre (Haas Control)

- Safe operating procedures
- Applied metrology
- Word address and CAM programming
- Appropriate sequence of operations
- External and internal cylindrical turning
- Taper turning
- Grooving (OD, ID, and/or Face)
- Threading (straight & tapered, internal & external)



CNC Vertical Machining Centre (Haas Control)

- Safe operating procedures
- Applied metrology
- Word address and CAM programming
- Appropriate sequence of operations
- Profile, pocket and thread milling
- Hole operations



EQUIPMENT & MATERIALS

Skills Canada Alberta Provided Tools, Materials, and Equipment

Measuring tools	Mill tooling	Lathe tooling
Mastercam software	Hand Tools	
Laptop	Workpiece materials	

Please Note:

- Workpiece materials may include mild steel, alloy steel, or aluminum
- Competitors may be required to share some of the supplied tools and equipment.
- The CNC machines will have the appropriate tooling installed and tool length information established prior to the start of the competition.



Competitor Provided Tools, Materials, and Equipment

CSA approved safety glasses	CSA approved steel toed footwear	CSA approved ear plugs
Shop coat or coveralls (optional)		

JUDGING CRITERIA

	Mill	Lathe
Project Completion	2.5%	2.5%
Compliance with Occupational Health and Safety regulations	2.5%	2.5%
Compliance with dimensions, tolerances, and fits as specified in plans	30%	30%
Theory Exam	10%	10%
Compliance with appropriate surface finish and deburring	5%	5%
	50%	50%
	Total 100%	

Important Notes:

- If a second work piece blank is required, the contestant will lose 20% from the *“Compliance with dimensions, tolerances and fits as specified in plans”* section.
- Projects will NOT be accepted for judging until the machinery and tooling used for the manufacture of the project is cleaned to the satisfaction of a committee member. **NO EXCEPTIONS.**

TIE BREAKING PROCESS

The time required by the competitors to complete their projects will determine the tie breaker.

CONTEST AREA SPECIFIC SAFETY REQUIREMENTS

Contest specific rules are intended to provide additional details and to clarify additional rules specific to the CNC contest. Contest specific rules do not supersede any overall competition rules which may be in conflict.



Topic/Task	Contest Specific Rule
Use of technology – Devices	<ul style="list-style-type: none"> • Programmable calculators, cell phones, and other devices using digital memory are prohibited in the shop area.
Drawings and documentation	<ul style="list-style-type: none"> • No drawings, notes, or other information recorded or calculated by the contestants are permitted to be taken outside the shop area.
Tooling, equipment, and software	<ul style="list-style-type: none"> • Competitors are prohibited from using tooling, software, or equipment that is not provided by the committee for the contest purposes. • Competitors are prohibited from changing any parameters or settings on supplied devices or machinery.
Equipment failure	<ul style="list-style-type: none"> • Extra time will only be allowed in the event of failure of any supplied tooling or equipment if the technician of the sponsor, supplying company, or committee expert deems the failure was not caused by user error.
Access to workshop	<ul style="list-style-type: none"> • No individual (contestant or non-contestant) will be permitted into the workshop area without appropriate the personal protective equipment (see Equipment & Materials for details) • Competitors are required to follow all industry safety standards during the competition
Responsibility for CNC Programs	<ul style="list-style-type: none"> • CNC programs generated by CAD/CAM software are the responsibility of the contestant. Incorrect code output by the CAD/CAM system resulting in a machining error or machine collision, regardless of the reason, is deemed to be the fault of the contestant and no additional time will be given. It is the contestant’s responsibility to verify the code. Any code entered into the machine must be carefully checked by the contestant prior to operating the machine. The contestant should request assistance from a PTC member regarding any perceived issues with the CAD/CAM system or its output.

CLOTHING REQUIREMENT

Appropriate work clothing must be worn to compete. All clothing must be neat and clean, and free of rips and tears. Casual wear such as shorts, sleeveless shirts, and open toed shoes/sandals will not be permitted. Long hair must be tied back. No loose-fitting clothes or jewelry. Short-sleeved shirts are permitted.





ADDITIONAL INFORMATION

Skills Canada Alberta Regional and Provincial Rules and Regulations

[Regional and Provincial Rules and Regulations](#)

Test Project change at the Competition

Where the Test Project has been circulated to competitors in advance, PTC can change a maximum of 30% of the work content.

Lunch

Lunch for competitors will be provided by Skills Canada Alberta.

Parking & Venue Maps

<http://edmontonexpocentre.com/attend/parking/>

Parking is FREE for all attendees.

Opening Ceremonies / On-site Provincial Competitor Registration

Opening Ceremonies for the PSCC will take place on Tuesday May 7, 2024, at 6:00 pm in Hall D of the Edmonton EXPO Centre. Admission is free, and everyone is welcome to attend. It is important to note that competitor registration will open immediately following the Opening Ceremonies.

Awards Ceremony

The Awards Ceremony will take place on Thursday May 9, 2024, at 6:30 pm in Hall D of the Edmonton EXPO Centre. Admission is free and everyone is welcome to attend. The Awards Ceremony will be shown live at <http://skillsalberta.com/>

Team Alberta Information

Team Alberta will be selected at the PSCC Awards Ceremony. Gold medalists will then be eligible to participate at the Skills Canada National Competition (SCNC) on May 27- June 1, 2024, in Quebec City, QC. It is recommended that competitors review the SCNC contest description to be familiar with the national contest description and project at <http://www.skillscanada.com/>.

During the PSCC Awards Ceremony on Thursday May 9, 2024, gold medalists will be given their Team Alberta information package and will confirm their participation in the SCNC. Students must be present at the Awards Ceremony to claim their position on Team Alberta. If the Gold medalist is not able to attend SCNC, the next top-ranking individuals will be asked to participate. If a student is not able to attend the Awards Ceremony a letter confirming the student's interest in Team Alberta participation must be emailed to javierad@skillsalberta.com prior to the start of competition on May 8, 2024.





Please prepare your students in advance to accept a position on Team Alberta and outline how your school will support their participation.

Questions?

Please contact Whitney Koop at whitneyk@skillsalberta.com if you have any questions regarding the Contest Description.

COMMITTEE MEMBERS

Brandon Walker	Ryan Reeves	Lee Blakely
Jason Aalders	Tim Wong	Marko Crepulja
Rob Fortier	Matthew Wood	Darren Roth
Graham Greenhall	Phillip Townsend	

