

2021 PROVINCIAL SKILLS CANADA COMPETITION



CONTEST DESCRIPTION

CONTEST AREA: CNC MACHINING			LEVEL: Post-Secondary
COMPETITION DATE AND TIMES:			LOCATION: Competitors will compete individually from their local Post-Secondary Institution
Orientation	April 24, 2021	8:00AM-9:00 AM	
Competition Day 1	April 24, 2021	9:00AM-4:00 PM	
Competition Day 2	April 25, 2021	8:00AM-3:00 PM	
Lunch	1 hour per day		
Duration: 12 Hours			WorldSkills Trade #: 06
<p>COMPETITION FORMAT: (VIRTUAL, AT A POST-SECONDARY INSTITUTION) Competitors will compete individually, in person, from their local Post-Secondary Institution. Location specific COVID-19 protocols must be followed. Post-Secondary Institutions and competitors will need to work together to ensure the competitor is ready for success on their competition day. They will need to prepare their competition space with all of the required tools, equipment, materials, and technology (as listed below) that will be needed to complete the competition. This competition will be closed to the public. Only registered competitors and assigned Provincial Technical Committee members will be allowed to attend.</p> <p>COMPETITION ORIENTATION: The competition will begin with a virtual orientation. Competitors will join the assigned videoconference link that will be emailed to all registered competitors for the competition orientation. Camera's MUST be on and competitors visible on the camera during the orientation.</p> <p>LIVESTREAMED COMPETITION: (If applicable) Competitors must film their competition throughout the entire day. Camera's MUST be on and competitors visible on the camera, as well as mics working. Competitors must consider their camera angle and lighting in advance of the competition. It is the competitor's responsibility to ensure they are prepared for a day long livestream.</p> <p>SHIPPING PROJECT FOR JUDGING: Competitors will be required to ship their finished projects for judging. Skills Canada Alberta will provide packaging and shipping labels. Competitors will be required to ship their projects with in 36 hours. Additional shipping information will be shared in advance of the competition.</p> <p>SAFETY: The health, safety, and welfare of all individuals involved with Skills Canada Alberta are of vital importance. Safety is a condition of participation with Skills Canada Alberta and shall not</p>			

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be sacrificed for the sake of expediency. At the discretion of the judges and technical committees, any competitor can be denied the right to participate should they not have the required proper safety equipment and/or act in an unsafe manner that can cause harm to themselves or others.

Safety Checklist: It is the responsibility of each competitor and teacher to review the Safety Checklist (<https://skillsalberta.com/additional-2021-competition-resources/>) in advance of the competition and ensure they are able to meet all safety requirements. During the orientation, the safety checklist will be formally reviewed.

AWARDS CEREMONY INFORMATION: Please join us for a live virtual awards ceremony on May 13th at 6:30PM.

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 last updated date. Changes will be highlighted in yellow

CONTEST INTRODUCTION

A CNC machinist programs and operates automated machine tools to manufacture parts from raw material for a variety of industries. Nearly all consumer goods have been machined or are manufactured from tools or equipment which has been manufactured by a machinist.

SKILLS AND KNOWLEDGE TO BE TESTED

The competition will occur 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

CNC Vertical Machining Centre (Haas Control)

- Safe operating procedures
- Applied metrology
- Word address and CAM programming

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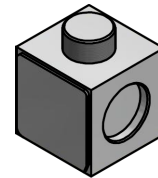
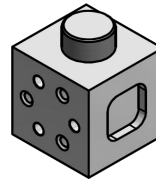
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- Appropriate sequence of operations
- External and internal cylindrical turning
- Taper turning
- Threading (straight & tapered, internal & external)



- Appropriate sequence of operations
- Profile, pocket and thread milling
- Hole operations



EQUIPMENT & MATERIALS

Institute Provided Tools, Materials, and Equipment

Measuring tools	Mill tooling	Lathe tooling
Mastercam software	Fusion 360 software	Hand tools
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 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
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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 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.

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	<ul style="list-style-type: none">• 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

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. No loose-fitting clothes or jewelry. Short sleeve shirts are permitted.

ADDITIONAL INFORMATION

Skills Canada Alberta Regional and Provincial Rules and Regulations
[Regional and Provincial Rules and Regulations](#)

Post-Secondary Competitor Information is [available here](#).

Lunch

Lunch will be provided by Skills Canada Alberta

Team Alberta Information

Team Alberta will be selected from competition Gold medalists who will then be eligible to participate at the Skills Canada National Competition (SCNC) in a virtual format May 25-30, 2021. 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/>.

Ethical Conduct

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We recognize that participants will be competing individually in their own unique environments. We expect all competitors to compete fairly, respecting and abiding by the established rules in the true spirit of Skills Canada Alberta.

Letter of Participation

Competitors who participate in the 2021 Provincial Skills Canada Competition are eligible for a Letter of Participation by request by contacting katherinek@skillsalberta.com.

COMMITTEE MEMBERS

Brandon Walker	Ryan Reeves	Reece Burdeniuk
Trevor Fandrick	Tim Wong	Marco Crepulja
Phillip Townsend	Darren Roth	