

2021 PROVINCIAL SKILLS CANADA COMPETITION



CONTEST DESCRIPTION

CONTEST AREA: INDUSTRIAL CONTROL			LEVEL: Post-Secondary
COMPETITION DATE AND TIMES:			LOCATION: Competitors will compete individually from their local Post-Secondary Institution.
Orientation	May 1 st , 2021	8:00AM-9:00 AM	
Competition Day 1	May 1 st , 2021	9:00AM-4:00 PM	
Competition Day 2	May 2 nd , 2021	8:00AM-3:00 PM	
Lunch	1 hour per day		
DURATION: 12 HRS			WorldSkills Trade #: 19
<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: 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>			



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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 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

Description of the associated work role(s) or occupation(s).

<https://www.skillscompetencescanada.com/en/skills/construction/industrial-control/>

SKILLS AND KNOWLEDGE TO BE TESTED

Designing, installing, and commissioning of an automated process using a Programmable Logic Controller (PLC).

PROJECT DESCRIPTION

The project will be the construction and programming of an automated control process using standard wiring methods and a programmable logic controller.



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Tasks that **may** be performed during the contest:

- Interpreting and using electrical designs, diagrams and a process flow chart to assemble a functional control system.
- Installing various industrial cables and raceways to a wall mounted control panel.
- Programming a PLC, to meet project requirements.
- Installing and commissioning terminal components (push buttons, limit switches, pilot device, etc.)
- Wiring a panel using standard trade practices, complying with relevant sections of the Canadian Electrical Code.
- Determining adequate protection for equipment, components and personnel.
- Diagnostic and fault finding on actual project.
- Proper Occupational Health and Safety procedures.
- Interpreting and using electrical designs, diagrams and a process flow chart to assemble a functional control system.
- Installing various industrial cables and raceways to a wall mounted control panel.
- Programming a PLC, to meet project requirements.
- Installing and commissioning terminal components (push buttons, limit switches, pilot device, etc.).
- Wiring a panel using standard trade practices, complying with relevant sections of the Canadian Electrical Code.
- Determining adequate protection for equipment, components and personnel.
- Diagnostic and fault finding on actual project.
- Proper Occupational Health and Safety procedures

Test Project change at the Competition

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



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EQUIPMENT & MATERIALS

Institute Provided Tools, Materials, and Equipment

- All required materials to assemble the project
- Conduit Bender
- Cordless Drill
- Power bar
- Step Ladder

Competitors will be required to use the material and equipment provided by the institute/Skills Canada Alberta. All other material and equipment will be removed from the skill area if not pre-approved.

Competitor Provided Tools, Materials, and Equipment

- Programmable Logic Controller, communication cable and software. Laptop computer with appropriate operating system and PLC software. Computer & PLC need to be free of all pre-programmed PLC files. Computer will be inspected by the Provincial Technical Committee (PTC) prior to usage.
- The PLC must have the following minimum requirement:
 - 120 VAC power will be provided to supply the Enclosure
 - 24 Volt DC Inputs and Outputs
 - Fit into a space 250mm high x 250mm deep x 500 mm wide
 - 16 - Inputs
 - 16 -Relay Outputs
 - Internal Battery (if applicable)
 - PLC technical documents/manuals will be permitted provide they are free of additional notes and writings and contain only original manufacturer's information.
 - Additional backup PLC (Recommended)
- DC Power Supply (120VAC:24VDC) (if required for competitors PLC)
- Multimeter
- Complete set of pliers (diagonal cutting, needle nose, electrician's, terminal crimper, slip-joint type)
- Complete set of screwdrivers (Phillips, Robertson, Slotted or Standard)



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- Level(s)
- Wire strippers
- Electrician’s knife (utility knife not allowed)
- Metric measuring tape
- Ruler, straight edge, and/or T-square
- Metal saw (Hack saw-recommended 32TPI) & mitre-box/vise
- Flat and round metal file with handle
- Hammer
- Centre punch
- Set of metal drill index
- Knockout punches and/or carbide hole saw (22 mm) or Unibit
- Full compliment of screwdriver tips for cordless drill (short & long including nut drivers)
- Set of termination screwdrivers (slotted)
- Adjustable wrench
- Allen keys (metric and imperial)
- Any additional tools are subject to approval from Provincial Technical Committee Chair prior to competition start.
- No additional power tools and no pre-fabricated templates allowed.

JUDGING CRITERIA

POINT BREAKDOWN	/100
Measurements	TBD
Wiring & Components Installation	TBD
Functionality of Automated Process	TBD
Safety practices	TBD

TIE BREAKING PROCESS



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- Tiebreaker #1: The Competitor with the highest score in the Wiring & Workmanship will be declared the winner.
- Tiebreaker #2: The Competitor with the highest score in the Functionality will be declared the winner.
- Tiebreaker #3: The Competitor with the highest score in the Installation Measurements will be declared the winner.

SAFETY

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CONTEST AREA SPECIFIC SAFETY REQUIREMENTS

List of required personal protective equipment (PPE) provided by the Competitor.

- Safety Glasses with side shields
- CSA approved Safety Shoes
- Protective Gloves (high dexterity)
- Hearing protection
- Hard Hat
- Lockout Hasp for Main Disconnect

CLOTHING REQUIREMENT



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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 and open toed shoes/sandals will not be permitted. No loose-fitting clothes or jewelry.

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 the competitions Gold medalists who will then be eligible to participate at the Skills Canada National Competition (SCNC) on June 1-5, 2021 in Quebec City, Quebec. 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/>.

Please be prepared in advance to accept a position on Team Alberta and know how your school will support your participation.

Ethical Conduct

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



2021 PROVINCIAL SKILLS CANADA COMPETITION



Ben Cooney
Ken Bodell
Michael Carrick
Neil Schlosser
Peter Friesen
Tyler Wasilenko
Zack Hartle

