



Contest Description
Edmonton Expo Centre, Edmonton
May 3 & May 4, 2023

EVENT: Electronics	LEVEL: Secondary																																				
WORLDSKILLS TRADE #:	LOCATION: Hall B, Edmonton Expo Centre, Edmonton																																				
DURATION: 13 hrs (Two Days)	REGIONALIZED: No																																				
COMPETITION SCHEDULE: <table border="1" style="width: 100%;"> <tr> <td colspan="2">May 3:</td> <td colspan="2">May 4:</td> </tr> <tr> <td>ORIENTATION</td> <td>7:30AM-8:00AM</td> <td>ORIENTATION</td> <td>7:30AM-8:00AM</td> </tr> <tr> <td>COMPETITION</td> <td>8:00AM-9:45AM</td> <td>COMPETITION</td> <td>8:00AM-9:45AM</td> </tr> <tr> <td>BREAK</td> <td>9:45AM-10:00AM</td> <td>BREAK</td> <td>9:45AM-10:00AM</td> </tr> <tr> <td>COMPETITION</td> <td>10:00AM-11:30AM</td> <td>COMPETITION</td> <td>10:00AM-11:30AM</td> </tr> <tr> <td>LUNCH</td> <td>11:30AM-12:30PM</td> <td>LUNCH</td> <td>11:30AM-12:30PM</td> </tr> <tr> <td>COMPETITION</td> <td>12:30PM-2:00PM</td> <td>COMPETITION</td> <td>12:30PM-2:15PM</td> </tr> <tr> <td>BREAK</td> <td>2:00PM-2:15PM</td> <td></td> <td></td> </tr> <tr> <td>COMPETITION</td> <td>2:15PM-3:30PM</td> <td></td> <td></td> </tr> </table> <p>The times above are approximate and may change as required.</p>		May 3:		May 4:		ORIENTATION	7:30AM-8:00AM	ORIENTATION	7:30AM-8:00AM	COMPETITION	8:00AM-9:45AM	COMPETITION	8:00AM-9:45AM	BREAK	9:45AM-10:00AM	BREAK	9:45AM-10:00AM	COMPETITION	10:00AM-11:30AM	COMPETITION	10:00AM-11:30AM	LUNCH	11:30AM-12:30PM	LUNCH	11:30AM-12:30PM	COMPETITION	12:30PM-2:00PM	COMPETITION	12:30PM-2:15PM	BREAK	2:00PM-2:15PM			COMPETITION	2:15PM-3:30PM		
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SKILLS AND KNOWLEDGE TO BE TESTED

The contest will cover the theoretical and practical aspects of current state of the art electronic industry standards. The competitor may be asked to demonstrate abilities in the following areas:

- Interpret electronic schematic diagrams, pictorials, manufacturers technical specifications and suppliers’ catalogues.
- Identify common electrical and electronic components.
- Construct, analyze, and troubleshoot DC circuits including series resistance, parallel resistance, series-parallel resistance and solid-state switching circuits
- Construct, analyze, and troubleshoot circuits which may include diodes, transistor amplifiers, IC amplifiers, operational amplifiers and comparator circuits, TTL/CMOS gates, timers.
- Construct, analyze, and troubleshoot circuits using solderless breadboards as well as soldering/desoldering through-hole components on PCBs.



2023 Provincial Skills Canada Competition



- Apply the appropriate test procedures and equipment to a given situation.
- Interpret the observed values from the test equipment. (DC voltages, currents and waveforms and circuit resistance).
- Answer questions related to basic electrical/electronic theory.

PROJECT DESCRIPTION

Actual project details will be released the morning of the competition.

Tasks that may be performed during the contest:

Day 1

- **Part 1 – Schematic Reading and Breadboarding:** Construct a circuit (or circuits) from provided schematics and datasheets on a solderless breadboard.
- **Part 2 – Electronics Theory:** Answer short-answer and/or multiple choice questions on electronics theory, components, digital logic, circuit analysis, and/or measurement interpretation.

Day 2

- **Part 3 – Soldering/Desoldering:** Hand solder through-hole components on a printed circuit board to acceptable industry standards. Desolder through-hole components, preserving the PCB pads in order to solder in new components.
- **Part 4 – Measurement and Troubleshooting:** Identify and correct errors with a provided circuit. Use a digital multimeter to measure DC voltage, current, and continuity in the corrected circuit. Use measurements to determine what to change in the circuit to produce provided results.

EQUIPMENT & MATERIALS

Skills Canada Alberta Provided Tools, Materials, and Equipment

- Workstation (Table, chair, powerbar)
- Soldering Equipment
 - Soldering Iron
 - Fume extraction
 - ROHS Compliant Lead-Free Solder
 - Solder wick
 - Flux
 - Third hand or other appropriate work-holding device



- Electronics Components, Power Supply, PCBs

Competitor Provided Tools, Materials, and Equipment*

- Digital multimeter (w/ a fresh battery)
- Long nose pliers
- Side Cutters
- Wire Stripper
- Screwdrivers (including precision set)
- “Third Hand” including magnifying glass. (optional)
- Safety Glasses
- Pens, Pencils, Eraser, Ruler
- Stand-alone calculator (non-programmable i.e. TI-30Xa)

*Competitors and schools will need to work together to arrange for the tools, equipment, and materials provided by the competitor. If a competitor and/or school is not able to procure a certain item, please contact Tim Chapman at timc@skillsalberta.com to inquire if additional arrangements can be made.

JUDGING CRITERIA

Task	Weight
1. Schematic Reading and Breadboarding	30%
2. Electronics Theory	20%
3. Soldering/Desoldering	30%
4. Measurement/Troubleshooting	20%

TIE BREAKING PROCESS

In the case of a tie, the winner will be determined by the highest score in Part 3: Soldering/Desoldering. If these scores are tied, the winner will be determined by the highest score in Part 1: Schematics Reading and Breadboarding. If these scores are also tied, the winner will be determined by the highest score in Part 4: Measurement/Troubleshooting.

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 and open toed shoes/sandals will not be permitted. No loose-fitting clothes or jewelry. Long hair must be tied back for the soldering/desoldering task.

ADDITIONAL INFORMATION



Skills Canada Alberta Regional and Provincial Rules and Regulations

[Regional and Provincial Rules and Regulations](#)

Competitor Registration

Registration for Provincial Skills Canada Competition (PSCC) will open online on January 18, 2023 @ 8:30 AM. Please refer to this competitions event page for additional registration and competition information: <https://skillsalberta.com/competition/>

Lunch

Lunch for accredited competitors will be provided by Skills Canada Alberta.

Parking & Venue Maps: <http://edmontonexpocentre.com/attend/parking/>

Opening Ceremonies / Competitor Registration

Opening Ceremonies for the PSCC will take place on Tuesday May 2, 2023 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 Ceremony.

Awards Ceremony

The Awards Ceremony will take place on Thursday May 4, 2023 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 24- 27, 2023 in Winnipeg MB. 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 4, 2023 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 3, 2023.



Please prepare your students in advance to accept a position on Team Alberta and outline how your school will support their participation. Furthermore, it is very important that all fieldtrip/travel information for potential Team AB members is organized and completed prior to the selection of Team AB.

Questions?

Please contact Kennedy Mayer at kennedym@skillsalberta.com if you have any questions regarding the Contest Description.

COMMITTEE MEMBERS

Joe Wilson	Lee Bannister	
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