

Contest Description

Edmonton Expo Centre, Edmonton

May 8 & May 9, 2024

EVENT: Automobile Technology	LEVEL: Secondary								
WORLDSKILLS TRADE #: 33	LOCATION: Hall C, Edmonton Expo Centre, Edmonton								
DURATION: 10 Hrs. (Two Days)	REGIONALIZED: YES, Students must qualify through a Regional Skills Canada Competition (RSCC) to earn a position in the Auto Technology competition at the Provincial Skills Canada Competition (PSCC).								
COMPETITION SCHEDULE: May 8: <table border="1"> <tr> <td>ORIENTATION</td><td>8:00AM - 8:30AM</td></tr> <tr> <td>Competition Start</td><td>8:30AM</td></tr> <tr> <td>LUNCH</td><td>11:45AM-12:45PM</td></tr> <tr> <td>Competition Ends</td><td>4:00 PM</td></tr> </table>		ORIENTATION	8:00AM - 8:30AM	Competition Start	8:30AM	LUNCH	11:45AM-12:45PM	Competition Ends	4:00 PM
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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 last updated date. Changes will be highlighted in yellow.

CONTEST INTRODUCTION

To identify and evaluate a competitor's knowledge of the Automotive Technology trade. The competitor will display his or her understanding of specific areas of the automobile and demonstrate their skills for maintaining and repairing components related to those areas.

SKILLS AND KNOWLEDGE TO BE TESTED:

Practical Demonstrations – 100%



PROJECT DESCRIPTION

Automotive Technicians perform preventative maintenance, diagnose faulty operations and repair automotive vehicles and light trucks. The competitor is required to complete multiple competition areas while being held to industry standard. The areas are as follows:

Brakes and Stability Control Systems

Competitors may be required to:

- Dis-assemble and assemble disc and drum brake assemblies.
- Measure minimum rotor thickness, maximum rotor thickness variation, and rotor run-out.
- Measure brake drum diameter and brake drum out of round.
- Properly adjust brake shoe to drum clearance.
- Adjust wheel bearings.
- Flare and bend brake tubing.
- Determine if a wheel speed sensor needs replacing.
- Use a scan tool to diagnose chassis systems.
- Machine brake components using an on car lathe and or off car lathe.

Suspension and Steering Systems

Competitors may be required to:

- Identify the type of suspension and steering systems used in a vehicle.
- Remove and install the coil spring in a strut assembly.
- Dismount and mount a tire on a rim, using supplied equipment.
- Perform a tire repair.
- Balance a tire and rim assembly and check the assembly for road force variation.
- Interpret wheel alignment readings and recommend corrective adjustments.
- Perform a toe adjustment.
- Diagnose and repair a tire pressure monitor system.

Driveline

Competitors may be required to:

- Remove and install universal joints in a driveshaft.
- Remove and install a CV boot on an axle shaft.
- Measure differential pinion bearing preload.
- Measure backlash in a differential assembly.
- Identify whether a gear tooth pattern is acceptable.
- Identify paths of power in a manual transmission.
- Identify components in a manual transmission.
- Remove and install a clutch assembly to a flywheel.



- Perform flywheel runout check.
- Install a clutch housing and transmission input assembly.

Body Electrical

Competitors may be required to:

- Perform electrical measurements on an electrical circuit to verify operation.
- Perform electrical measurements with a DVOM, Lab Scope and/or a test light.
- Manufacture basic electrical systems using crimping and soldering tools.
- Interpret a wiring diagram.
- Diagnose faults in an electrical circuit.

Engine Mechanical

Competitors may be required to:

- Remove and install components on an engine.
- Measure engine components for flatness, out of round, taper, diameter, endplay, clearance and lift.
- The competitor may be required to use dial indicators, cylinder bore gauge, straight edges, feeler gauges, micrometers, telescopic gauges, plastigauge or calipers.
- Perform a cylinder leak down test and compression test.

Engine Performance

- Diagnose operational characteristics of the engine.
- Use a scan tool to identify DTC’s in the engine management system.
- Follow the manufacturer’s diagnostic procedures to identify the cause of the DTC and the repair required to remedy the condition. This may require the competitor to use common diagnostic tools to verify electrical circuits for voltage, amperage and resistance as well as identifying opens, shorts to ground, shorts to voltage and excessive resistance for failed components.
- Use a scan tool to activate engine management outputs.

EQUIPMENT & MATERIALS

Equipment and Materials Competitors Must Supply:

CSA Approved Safety Glasses	CSA approved Footwear	HB Pencil and Eraser
Appropriate work clothing		

Equipment and Materials Supplied by the Committee:

Materials	Hand tools	Calculators
Electrical test equipment required to perform the tasks		

JUDGING CRITERIA

Each competitor will be judged for their ability to comprehend written instructions, interpret and perform tasks related to each practical test, and demonstrate common safety practices. All tasks are equally weighted, and the total is comprised of an average of all tasks combined.

TIE BREAKING PROCESS

In the event of a tie the competitor's safety mark will be added into their total mark. The competitor with the highest total points will be the winner. In the event of a second tie, the competitor will be given points based on their standing in each individual competition area.

1st place 5 points

2nd place 4 points

3rd place 3 points

4th place 2 points

5th place 1 point

The competitor with the highest total points will be the winner.

RELATED CAREER AND TECHNOLOGY STUDIES COURSES

Descriptions of all courses are located at the following website:

<http://www.education.gov.ab.ca/cts>

MEC1040: Engine Fundamentals	MEC2090: Electrical Components	MEC3030: Engine Diagnosis
MEC1090: Electrical Fundamentals	MEC2110: Braking Systems	MEC3040: Engine Tune-up
MEC2030: Lubrication & Cooling	MEC2130: Drive Line	MEC3060: Engine Reconditioning- Head
MEC2040: Fuel & Exhaust Systems	MEC2140: Transmissions/Transaxles	MEC3070: Engine Reconditioning – Block
MEC2060: Ignition Systems	MEC2150: Suspension Systems	MEC3090: Computer Systems
MEC2070: Emission Controls	MEC2160: Steering Systems	MEC3130: Automatic Transmissions
MEC3150: Wheel Alignment		

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 will not be permitted. No loose fitting clothes or jewelry. Long hair must be kept from obstructing vision and controlled in a manner that prevents entanglement.





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.

ADDITIONAL INFORMATION

Skills Canada Alberta Regional and Provincial Rules and Regulations

[Regional and Provincial Rules and Regulations](#)

Competitor Registration

Registration for regionalized events will open online at on January 10, 2024 @ 8:30 AM. Please refer to this competitions event page for additional registration and competition information:

<https://skillsalberta.com/competition/>

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 accredited competitors will be provided by Skills Canada Alberta.

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

Parking is FREE for all attendees.

Opening Ceremonies / 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 Ceremony.

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

COMMITTEE MEMBERS

Lee Swalm- SAIT	Harley Breadner-SAIT
Russ Belik - NAIT	Jerry Friesen -Lethbridge College
Tim Isaac - Secondary	Andrew Wright - SAIT
Dave Daniels – Lethbridge College	Martin Larsen – Northwestern Polytechnic
Dave Cole – Lethbridge College	Mark Hager- Lakeland College
Eric Mitchell – Lethbridge College	Mike Kaziechko – AIT
Matt Carpenter - SAIT	Allan Hopper- Lakeland College
Geoff Brown-SAIT	Donald Dobson - Secondary
Wayne Martineau - SAIT	