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2018

# SCNC

SKILLS CANADA  
NATIONAL COMPETITION

# OCMT

OLYMPIADES CANADIENNES  
DES MÉTIERS ET  
DES TECHNOLOGIES



skillsCompétences  
Canada  
Edmonton2018

CONTEST DESCRIPTION / DESCRIPTION DE CONCOURS

# AUTOMOBILE TECHNOLOGY TECHNOLOGIE DE L'AUTOMOBILE

SECONDARY AND POST-SECONDARY /  
NIVEAUX SECONDAIRE ET POSTSECONDAIRE



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## **1 THE ESSENTIAL SKILLS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY**

SCC is currently working with Employment and Social Development Canada (ESDC) in order to bring awareness to the importance of Essential Skills that are absolutely crucial for success in the workforce. Part of this ongoing initiative requires the integration and identification of Essential Skills in contest descriptions, projects, and project documents. The next phase and very important aspect of our Essential Skills (ES) initiative is to provide an ES report card to each competitor at the Skills Canada National Competition. The purpose of the ES report card is to inform the competitor about their current level of essential skills based on their competition scores. With this knowledge, the competitor will be made aware which essential skill may require improvement. Full implementation is expected in the next Skills Canada National Competition.

The following 9 skills have been identified and validated as key essential skills for the workplace in the legend below:

<sup>1</sup>Numeracy, <sup>2</sup>Oral Communication, <sup>3</sup>Working with Others, <sup>4</sup>Continuous Learning, <sup>5</sup>Reading Text, <sup>6</sup>Writing, <sup>7</sup>Thinking, <sup>8</sup>Document Use, <sup>9</sup>Digital

These essential skills have been identified with in section 2.3 and/or 3.2 of your Contest Description. The top three Essential Skills for your area of competition have been identified on your Project and all other supporting project documents.

## **2 CONTEST INTRODUCTION**

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

<http://skillscompetencescanada.com/en/careers/transportation/automotive-service/>

### **2.2** Purpose of the Challenge.

Assess the competitor skills in correctly inspecting, repairing and adjusting detached and / or mounted auto parts, as compared to industry standards. Practical assignments will be based on selected areas of the scope document.

### **2.3** Duration of contest.

12 hours

### **2.4** Skills and Knowledge to be tested.

The following will be tested during the contest: Service Information Retrieval, Engine Mechanical, Engine Management, Ignition Systems, Vehicle Emission Systems, Electrical Accessories, Electrical, Braking systems, Suspension and Steering, and Power Trains.

### 3 CONTEST DESCRIPTION

3.1 List of documents produced and timeline for when competitors have access to the documents.

DOCUMENT	DATE OF DISTRIBUTION VIA WEBSITE
Vehicle Manufacturer	Two weeks before the competition

3.2 Tasks that may be performed during the contest

- **Workshop Procedures**  
 Service Information Retrieval  
 Electronic system use  
 Traditional manual/information printouts use.<sup>5</sup>  
 Interprets work order information to convey diagnostic approach.<sup>8</sup>  
 Explanation of service work performed.
- **Engine Mechanical<sup>7</sup>**  
 Assembly / disassembly  
 Identify components  
 Component fault diagnosis  
 Inspection and testing  
 Diagnosis and service of cylinder heads and blocks  
 Measurements with precision measuring tools which could include but not limited to; plastigauge, micrometers, feeler gauges, and straight edge<sup>9</sup>
- **Engine Ignition, Management and Emissions<sup>7</sup>**  
 Identify components  
 Drivability diagnostics and repair  
 Test equipment usage  
 Scan Tool  
 Multi-meter (DVOM)  
 Lab-scope  
 System repair  
 Component operation and testing
- **Electrical Systems**  
 Starting systems  
 Charging systems  
 Batteries  
 Accessories  
 Testing and diagnosis  
 Body and Chassis Electrical

- **Braking Systems (excluding air brake systems)**  
Identify components  
Inspection and testing  
Assembly / disassembly  
Base Brake systems  
ABS / Traction / Stability  
Maintenance, repairs, & adjustments (may include rotor and drum service).  
Diagnostics
- **Suspension and Steering<sup>7</sup>**  
Identify components  
Inspection and testing  
Assembly / disassembly  
Maintenance, repair and adjustment  
Diagnostics
- **Manual Transmission and Drivetrain Components**  
Identify components  
Inspection, measurement and testing<sup>1</sup>  
Assembly / disassembly  
Maintenance / adjustments  
Driveline measurements and adjustments  
Driveshaft diagnosis and repair

*Essential Skills – <sup>1</sup>Numeracy, <sup>5</sup>Reading Text, <sup>7</sup>Thinking (Critical, Job Task Planning & Organizing),  
<sup>8</sup>Document Use, <sup>9</sup>Digital*

#### **4 EQUIPMENT, MATERIAL, CLOTHING**

##### **4.1 Equipment and material provided by Skills/Compétences Canada**

All required tools and equipment

- Fluke Digital Multimeters
- Brake Resetting Gauge
- Jack stands
- Striking Straight Blade Pry Bar
- Standard Locking Pliers (10 Inch)
- Needle Nose Locking Pliers (6 Inch)
- Interlocking Channel Pliers (9 Inch)
- Flare Nut Socket Set (6-Point)
- Brake Fluid Syringe
- Adapter (1/2 Internal Drive to 3/8 External Drive)
- Drive Breaker Bar
- Adjustable Wrench
- Flat Chisel
- Relay Test Jumper Kit
- AC/DC current adapter

- Spark tester
- Accessory lead kit
- DMM leads
- Cordless Work Lights
- Wrench Sets
- Fender Covers
- Identical Strut Compressors / Stands
- Straight Edge
- 12V MAX Cordless 3/8" Drive Impact Wrench Kit
- Torque wrenches torque to yield 3/8 and 1/2
- Ratchet long
- Pullers
- Scrapers
- Trouble lights (rechargeable)
- Metric impact sockets
- Std impact sockets
- Pry bars
- Piston ring installer
- Dial indicator vise grip base
- Differential Cylinder Pressure Tester
- Ford Camshaft Alignment Kit
- Engine Stands
- Shock Installation Tool Kit
- Jack Stands
- Flaring Kit (Double)(ISO)
- Impact Wrench
- Ball Joint/Disc Brake Dial Test indicator
- 3/8" Torque Wrench Click Type (5-75 ft. lb.)
- 1/2" Torque Wrench Click Type (50-250 ft. lb.)
- General Brake Service Set (7 pieces)
- Ball Peen Hammer (32 oz)
- Caliper Dial Type (US and Metric 0-6")
- Tape Measure (US and Metric 16 feet)
- Flare Nut Wrench Set Metric (9-21mm)
- Crows Foot Set Metric (10-19 mm)
- Plier Kits (8 inch)
- Tubing Bender
- Tubing Cutter
- Back Probe Kits
- Jumper Kit
- Test light
- Pliers
- Magnet

- Straight edge
- Feeler gauge
- Torque wrench ftlb & inlb
- Piston hammer
- Piston ring compressor
- Bore gauge
- Creepers
- Torque wrench ftlb
- 16 oz. Ball peen Hammers
- 3-PC. Pry Bar Set in Plastic Tray
- 4PC Universal Plier Set
- 3/8" Drive Speed Handle
- Magnetic base Digital Dial Indicator
- Drift Punch Set in Kit Bag
- In lb Torque Wrench
- Ft lb Torque Wrench
- 6 PC Adapter set
- Breaker bar
- Vernier caliper
- Socket and Wrench Set

**COMPETITORS WILL BE REQUIRED TO USE THE MATERIAL AND EQUIPMENT PROVIDED BY SCC. ALL OTHER MATERIAL AND EQUIPMENT WILL BE REMOVED FROM THE SKILL AREA.**

**4.2** Equipment and material provided by the competitor.

- Competitors are not required to bring any tools or equipment

**4.3** Required clothing provided by the competitor.

- A professional image must be portrayed. Appropriate work apparel must be worn. (Provincial shirts, coveralls, shop coats, work pants only, no hats and shirts must be tucked in)

## 5 SAFETY REQUIREMENTS

### 5.1 Safety workshop

Upon arrival at the Skill area, Competitors will participate in a Safety workshop and they will be expected to work and maintain a safe working area during the competition. Any Competitor breaking any health, safety and environmental rules, may be required to undertake a second safety workshop, this will not affect the Competitor's competition time.

### 5.2 List of required personal protective equipment (PPE) provided by competitors

- Safety Glasses
- CSA approved Safety shoes
- Hearing protection
- Nitrile and/or mechanics gloves are optional.

**Note:** Competitors will not be allowed to compete if the above items are not brought and used

## 6 ASSESSMENT

### 6.1 Point breakdown

POINT BREAKDOWN	/100
Engine Mechanical	16
Electrical	17
Engine Management	17
Suspension and Steering	17
Brakes and related systems	17
Manual Transmission	16

## 7 CONTEST SPECIFIC RULES

Contest specific rules cannot contradict or take priority over the Competition Rules. They do provide specific details and clarity in areas that may vary from contest to contest. Any additional contest rules will be reviewed during competitor orientation.

TOPIC/TASK	CONTEST SPECIFIC RULE
Use of technology	<ul style="list-style-type: none"> <li>• Competitors are not allowed cameras and or cell phones in the skill area.</li> </ul>



## 8 ADDITIONAL INFORMATION

### 8.1 Consecutive translation

If consecutive translation is required on site, the Skills/Compétences Canada Provincial/Territorial offices must advise Skills/Compétences Canada National Secretariat a minimum of 1 month prior to the competition or this service might not be guaranteed.

### 8.2 Tie (No ties are allowed)

In the event of a tie, the competitor with the highest score at the Electrical station criteria will be declared the winner. In the event a tie still remains, the competitor with the highest score in the Engine Mechanical criterial will be declared the winner. If a tie still remains, the competitor with the highest score in the Manual Transmission criteria will be declared the winner.

### 8.3 Test Project change at the Competition

Where the Test Project has been circulated to Competitors in advance, NTC shall change a maximum of 30% of the work content. Please refer to the Competition Rules.

### 8.4 Competition rules

Please refer to the [competition rules](#) of the Skills Canada National Competition

## 9 NATIONAL TECHNICAL COMMITTEE MEMBERS

Member Organization	Name
Manitoba	Len Grieve
Ontario - Chair	Martin Restoule
Newfoundland and Labrador	Charlie Druken
Saskatchewan	James Halushka
Prince Edward Island	Jeff Dingwell
Alberta	Ricky Martineau
British Colombia	Jason Devisser
Northwest Territories	Richard Kent
Nova Scotia	Daniel Hiltz
New Brunswick	Bill McDonald

Contact the Skills/Compétences Canada national secretariat for any questions or concerns: Marilou Leduc (mariloul@skillscanada.com).