



2018

# SCNC

SKILLS CANADA  
NATIONAL COMPETITION

# OCMT

OLYMPIADES CANADIENNES  
DES MÉTIERS ET  
DES TECHNOLOGIES



skillsCompétences  
Canada  
Edmonton2018

CONTEST DESCRIPTION / DESCRIPTION DE CONCOURS

# ROBOTICS ROBOTIQUE

SECONDARY /  
NIVEAU SECONDAIRE



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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/skills/manufacturing-engineering/robotics/>

2.2 Purpose of the Challenge.

To create engineering projects to encourage individuals with different skill sets to form co-operative teams<sup>3</sup> to design, fabricate, and operate a robot or multiple robots<sup>7</sup>.

<sup>3</sup>*Working with Others, <sup>7</sup>Thinking – Job Task Planning, Problem Solving, Critical Thinking*

2.3 Duration of contest.

12 hours

## 2.4 Skills and Knowledge to be tested.

The intent of the challenge is to have teams of students independently designing / fabricating / operating robots capable of completing the competition tasks in competition with other student-fabricated robots. Teams are not allowed to develop or implement strategies based on interfering with their opponent's ability to complete the competition task set.

## 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
Project <sup>8</sup>	September, 2017

<sup>8</sup>Document Use

### 3.2 Tasks that may be performed during the contest

- A team will consist of two competitors
- Teams will participate in BOTH the Teleoperation and the Autonomous Competition Element's on BOTH Competition Days in Edmonton

## 4 EQUIPMENT, MATERIAL, CLOTHING

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

- Exclusive Use Playing Fields for each Team's Game and Evaluated Robot Experiences
- One worktable with access to a 120 V power outlet (minimum 100W) per team
- A Component's Collection providing mechanical / electrical / control hardware required for the 'Built On-site Autonomous Robot Competition Element'

**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

- Robots - Robot accessories (including batteries, battery charger, spare parts)
- Various tools required to modify and repair robots onsite
- 25-foot multi-outlet extension cord / power bar
- Wiring diagram
- Easily accessible fuses
- Easily accessible kill switch(s)
- Robot stand
- Laptop(s)

#### 4.3 Required clothing (provided by the competitor)

- N/A

### 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 environment 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 Skills/Compétences Canada

- N/A

#### 5.3 List of required personal protective equipment (PPE) provided by the competitor

- Safety glasses

### 6 ASSESSMENT

#### 6.1 Point breakdown

- Medals will be determined by the overall results of the two days of competition

## 7 ADDITIONAL INFORMATION

### 7.1 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.

### 7.2 Tie (No ties are allowed)

The tied teams will play an additional Pipeline Game and use the score of that individual game to break the tie. If that game ended in a tie we would play a second Pipeline Game.

### 7.3 Test Project change at the Competition

- N/A

### 7.4 Competition rules

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

## 8 NATIONAL TECHNICAL COMMITTEE MEMBERS

Member Organization	Name
Alberta	Sheldon Marquis
Manitoba	Rory Winters
Ontario - Chair	Bob Tone
Newfoundland and Labrador	Dave Keefe
Saskatchewan	Kevin Chiasson
British Columbia	Bryan China
Nova Scotia	Piotr Kawalec

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