



CONTEST DESCRIPTION

# Robotics

SECONDARY

## Table of Contents

<b>1</b>	<b>THE ESSENTIAL SKILLS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY .....</b>	<b>3</b>
<b>2</b>	<b>CONTEST INTRODUCTION .....</b>	<b>3</b>
<b>3</b>	<b>CONTEST DESCRIPTION .....</b>	<b>4</b>
<b>4</b>	<b>EQUIPMENT, MATERIAL, CLOTHING .....</b>	<b>4</b>
<b>5</b>	<b>SAFETY REQUIREMENTS.....</b>	<b>5</b>
<b>6</b>	<b>ASSESSMENT .....</b>	<b>5</b>
<b>7</b>	<b>ADDITIONAL INFORMATION .....</b>	<b>5</b>
<b>8</b>	<b>NATIONAL TECHNICAL COMMITTEE MEMBERS .....</b>	<b>6</b>

## **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 sections 2, 3, 4, 5 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>	Septembre 2020

<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.

## 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'

### 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)

**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.**

#### **4.2.1 Toolboxes Guidelines**

One of the objectives of SCC is the sustainability of the Competition. As a result, the toolboxes brought by Competitors will be restricted to the following maximum specifications.

The Competitor toolbox must not exceed 64 cubic feet in volume. It can be multiple toolbox but the total of all toolbox, must not exceed the maximum volume indicated.

#### **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**

- Safety glasses
- Ear Plugs (optional unless told otherwise by ESR)

### **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 Interpreter**

If a competitor requires the help of an interpreter once onsite during the competition, 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 Ties**

Ties in individual tournament games are allowed.

No ties in overall mark total are allowed.

If a tie in overall marks occurs then the tie will be broken by examining the following individual mark categories in this order:

- **First:** Comparison of the tied teams overall points scored totals in all tournament games each team played. If the teams remain tied then:
- **Second:** Comparison of each teams total marks awarded in the Autonomous Robot Section'

- **Third:** Comparison of the tied teams total marks awarded based on their 20 tournament play individual games (total # of individual game loses = 0 marks / total # of individual game ties = 1 mark / total # of individual game wins = 2 marks).

### 7.3 Test Project change at the Competition

- The autonomous task is unknown in advance and may differ from the provincial competition.

### 7.4 Competition rules

Refer to the [competition rules](#) of the Skills Canada National Competition which can be found on our website.

## 8 NATIONAL TECHNICAL COMMITTEE MEMBERS

Member Organization	Name
Alberta	Sheldon Marquis
Manitoba	Ken Hartikainen
Ontario	Luca Comisso
Newfoundland and Labrador	Dave Keefe
Saskatchewan – Co-Chair	Dave Dalton
British Colombia	Brant Churchill
Prince Edward Island - Chair	Mark Shaw
New Brunswick	Edison Wasson
Yukon	Mitch Bruce

Contact the Skills/Compétences Canada national secretariat for any questions or concerns: Nathalie Maisonneuve (nathaliem@skillscanada.com).