



## **SKILLS CANADA PEI PROVINCIAL COMPETITION**

<b>CONTEST DESCRIPTION</b>	
<b>Competition Date</b>	Wednesday, March 8, 2017
<b>Competition location</b>	Holland College Waterfront Campus Room 151
<b>Trade Number</b>	04
<b>Trade Name</b>	MECHATRONICS
<b>Level</b>	POST SECONDARY

### **1. INTRODUCTION**

#### **1.1 Purpose of the Challenge.**

The competition will consist of teams of two participants. Open to Electro-Mechanical, Electrical, Electronic and Mechanical Engineering Technologies sectors.

By means of a practical exercise, measure certain skills that every technician must acquire in the field of control and automation.

The competition is based on tasks performed on Festo's MPS stations, with same tasks given to each team.

Competitors should have:

- Understanding of electronic and pneumatic diagrams, circuits and components.
- PLC programming knowledge, including editing software and PC to PLC communications.
- Troubleshooting techniques.
- Developing and using Sequential Function Charts or other PLC programming protocols.

#### **1.2 Duration of contest.**

6 Hours

- Start time: 9:00 AM
- End time: 3:30 PM
- Lunch break: 12:00 – 12:30 PM

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

- Interpreting and using electronic and pneumatic schematics, and mechanical drawings.
- Rendering operational and modifying sequential mechanisms that have a programmable logic controller.
- Commissioning electrical, pneumatic and mechanical systems.
- Troubleshooting.
- Executing tasks correctly and as fast as possible.

## **2. CONTEST DESCRIPTION**

### **2.1 Tasks that may be performed during the contest**

Competitors will build, program, troubleshoot and modify the Festo supplied Handling Station.



## **3. ESSENTIAL SKILLS**

Essential skills are used in nearly every job and at different levels of complexity. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change. Good Essential Skills means you will understand and remember concepts introduced in technical training. The level of Essential Skills required for most trades is as high or higher than it is for many office jobs.



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

#### **4.1** Each competitor will bring the following:

- Multimeter (V.O.M.).
- Various screwdrivers.
- Set of ALLEN metric keys.
- Set of open metric keys/wrenches or adjustable.
- Wire strippers, wire cutters and pliers

#### **4.2** Equipment and material provided by the competition site

- Handling Station (Festo)
- PLC board and programming tools

#### **4.3** Required clothing (Provided by competitor)

- Competitors are to be dressed in a clean and appropriate manner. The Mechatronics contest recommends that you wear long pants, belt, socks, and close toe shoes
- Jewellery such as rings, bracelets and necklaces or any deemed unsafe by competition judges shall be removed.
- Proper shop attire is to be worn (no loose straps, baggy sleeves, etc.) Or any item deemed unsafe by competition judges.

### **5. SAFETY REQUIREMENTS**

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

- Safety glasses will be mandatory during competition.

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



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### **6. ASSESSMENT**

#### **6.1 Point breakdown**

POINT BREAKDOWN	/1000
Assembling	10-20%
Programming	25-30%
Hardware and Software Modification	10-20%
Troubleshooting	15-20%

### **7. ADDITIONAL INFORMATION**

#### **7.1 Tie (No ties are allowed)**

In the event of a tie, the team with the highest score in the Expected functionality criteria will be declared the winner.

#### **7.2 Competition rules**

Please refer to the competition rules for all general PSC information.

### **8. CONTACT INFORMATION**

Name	Email address
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