



CONTEST DESCRIPTION

Industrial Mechanics

POST-SECONDARY

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1 THE SKILLS FOR SUCCESS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY

The Government of Canada has updated the previous Essential Skills framework to the new Skills for Success model in response to the evolving labour market and changing skill requirements. This model outlines nine fundamental skills Canadians need to thrive in work, education, training, and daily life.

Skills/Compétences Canada aims to highlight the importance of these skills, vital for success in trade and technology careers. Competitors can see how Skills for Success are integrated into contest descriptions, projects, and project documents. Recognizing these skills during the competition helps competitors match tasks with specific skills necessary for success and understand how these skills apply within their trade or technology programs and future careers.

The nine key Skills for Success, validated for workplace success, are:

1. Numeracy
2. Communication
3. Collaboration
4. Adaptability
5. Reading
6. Writing
7. Problem Solving
8. Creativity and Innovation
9. Digital

These Skills for Success are detailed in sections 2.4 and/or 3.2 (to be completed by SCC) of your Contest Description and, if relevant, in your Project and supporting documents.

2 CONTEST INTRODUCTION

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

https://www.skillscompetencescanada.com/en/skill_area/industrial-mechanic/

2.2 Purpose of the Challenge

The competition will assess each competitor's proficiency in Industrial Mechanic skills. Skills include precision hand layout, used for hand and power tools, mechanical component installation of industrial equipment, metal fabrication and welding, stainless-steel tube bending and fitting installation, fluid power schematics and construction of circuits, levelling, shaft alignment, and predictive maintenance including vibration measurement and balancing.

2.3 Duration of contest

12 hours

2.4 Skills and Knowledge to be tested.

Mark breakdown: 100% practical.

3 CONTEST DESCRIPTION

3.1 List of documents produced and timeline for when competitors have access to the documents on the Skills/Compétences Canada website.

DOCUMENT	DATE OF DISTRIBUTION
Project	Distributed on Competition Days
Skills Sets	December 2025

3.2 Tasks that may be performed during the contest.

- Perform hand tool operations.^{1,7}
- Perform precision hand layout operations.^{1,7}
- Read and interpret blueprints.⁵
- Perform and demonstrate the required skills to bend stainless steel tubing and install tube fittings to the given specifications to fit mechanical components.^{5,7}
- Install supplied fluid power components and build the required circuit as per given instruction.^{1,5,7}
- Perform Predictive Maintenance tasks such as vibration measurement and balancing.^{1,5,7} Perform hand tool operations.^{1,7}
- Perform a levelling procedure.^{1,5,7}
- Perform a machine shaft alignment using dials and/or a laser alignment tool, including a thermal growth offset calculation.^{1,5,7,9}
- Disassembly and reassembly of industrial mechanical equipment.^{5,7}
- Perform fabrication and welding tasks as per given blueprints. (Symbols Adapted to Scope of CSA W59 Standard. Canadian Welding Bureau.)^{5,7}
- Knowledge of Imperial measurement and ANSI symbols.¹
- ISO Fluid Power schematic drawings standards.⁵

All competitors will be required to sign a declaration stating they have not written a certificate of qualification examination or hold journeyperson status in a related trade.

Skills for Success – ¹Numeracy, ⁵Reading, ⁷Problem Solving, ⁹Digital

4 EQUIPMENT, MATERIAL, CLOTHING

4.1 Equipment and material provided by Skills/Compétences Canada

All required components, tools and equipment, including:

- All hand and power tools.
- All measuring tools.
- All welding tools, materials, and clothing.
- Fixturlaser laser shaft alignment, vibration measurement, and balancing equipment.
- “Swagelok” tube bending and tube fitting installation tools and components .
- Festo Didactic pneumatic or hydraulic components.
- Any tools required for the disassembly or reassembly or industrial equipment.

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.

- N/A

4.3 Required clothing provided by the competitor.

- Dressed in an appropriate manner with no visible Logos (Provincial attire is acceptable)
- Long hair must be tied back
- No loose clothing
- Clothing suitable for required task

5 HEALTH AND SAFETY

5.1 Safety program

SCC has implemented a comprehensive safety program as health and safety is an integral part of our competitions. Our safety program includes guidelines and procedures to make the work environment in each skill area safer.

5.1.1 Safety manual

As part of our program a safety manual has been created to monitor and document health and safety within each skill area. It includes a definite plan of action designed to prevent accidents. The safety manual will be provided for every skill and these instructions must be followed and respected by all participants and officials at the SCNC.

5.1.2 Safety workshop

During orientation, 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 Skills/Compétences Canada

- Grinding face shields
- Mechanics gloves
- Ear plugs
- Safety glasses
- Welding helmet
- Welding gloves and jacket

Note: Competitors who do not use the personal protective equipment when required will not be allowed to participate in the competition.

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

- CSA approved safety shoes/boots.
- Mechanics gloves may be used. (not required)
- Competitors may bring their own certified welding PPE, including helmet, jacket, and gloves. (not required)
- Competitors may use their own certified safety glasses. (not required)

Notes: Competitors will not be allowed to compete if the required items above are not brought and used.

Personal protective equipment provided by the competitor may be used at the discretion of the National Technical Committee based on safety, application, and competition fairness.

6 ASSESSMENT

6.1 Point breakdown

Note: This list is subject to change.

TASKS	/100
Layout, Measurement, Fabrication and MIG Welding	25
Predictive Maintenance (Vibration measurement and Balancing), levelling, and Shaft Alignment with Thermal Growth Offset	25
Fluid Power (pneumatics or hydraulic), and Stainless-Steel Tube Bending and Fitting Installation	25
Mechanical Component Installation and Industrial equipment Disassembly and Reassembly	25

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 the competitor orientation.

TOPIC/TASK	CONTEST SPECIFIC RULE
Use of electronic devices	- Electronic devices (including phones and smart devices) cannot be used during competition. - Competitor phones brought on site will be stored during competition time.
Competition documents and drawings	- Must not be removed from competition site and can not to be recorded. - Competitors must use provided documents.
Safety and Behaviour	- Safety rules and PPE requirements must be adhered to at all times when on the contest floor. - Competitors must behave in a respectful and professional manner. No alcohol or drugs allowed. - Tools and equipment must be used in an appropriate and safe manner.

8 ADDITIONAL INFORMATION

8.1 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 may not be guaranteed.

8.2 Ties

- Tiebreaker #1: In the event of a tie, the competitor with the highest score in the Shaft Alignment Project will be declared the winner.
- Tiebreaker #2: If a second tie occurs, the competitor with the highest score in the Layout and Fabrication Project will be declared the winner.
- Tiebreaker #3: If a third tie occurs, the competitor with the highest score in the Mechanical Component Installation Project will be declared the winner.

8.3 Competition rules

Refer to the competition rules of the Skills Canada National Competition which can be found on our website.

9 NATIONAL TECHNICAL COMMITTEE MEMBERS

MEMBER ORGANIZATION	NAME
Quebec	Mohamed Flyes – Co-Chair
Ontario	Jake Doan

Manitoba	Mike Williams
Saskatchewan	Neil Dielschneider
Alberta	Jason Parnell – Chair
British Columbia	Carey Simpson
New Brunswick	Patrick Guignard

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