



27th ANNUAL SKILLS MANITOBA COMPETITION CONTEST DESCRIPTION APRIL 10, 2025

1. CONTEST DETAILS

1.1. Contest Name: Mechanical Engineering CAD

1.2. Contest Number: 05

1.3. Level: Secondary & Post-Secondary

1.4. Contest Location: Red River College – Notre Dame Campus – Rm. T230

NOTE:

Secondary level: 2 competitors per school. Max secondary students 11

Post-Secondary level: 3 competitors per school. Max post-secondary students 5

2. CONTEST INTRODUCTION

2.1. Purpose of the Challenge

To evaluate each contestant's preparation for employment in the field of Engineering Design and Drafting. An assessment of the contestant's skills in performing design and drawing tasks using computer aided design and drafting will be conducted.

2.2. Contest Duration

4 hours, starting at 8:30AM after registration

2.3. Skills & Knowledge to be Tested

- Understand and use fundamental commands and processes to create 3D parametric model part files, assembly files, and drawing files
- Use CAD software to produce drawings that comply with the following standards:
 - CAN3-B78.1 –M83(R1990)
 - CAN/CSA-b78.2-M91
 - B97.3-M1982(r1992)
- Use CAD software to create an assembly model from multiple part files
- Produce a working drawing complete with the bill of materials
- Use CAD software to produce a 3D parametric model part file from an existing object and existing shop drawings

2.4. Contest Description

Skills and knowledge that may be required to complete the following tasks that may be performed during the contest:

Tasks:

- Create an assembly file from provided part drawings.
- Create a drawing file from the created assembly and part models. This is to include:
 - Appropriate orthographic and/or cross section views, auxiliary views, details, and an assembled isometric view
 - Parts list and labeling of each component
- **Note:** Part files may or may not include such details as threading, countersunk holes, and patterns

3. ASSESSMENT

3.1. Point Breakdown (Post-Secondary & Secondary)

Point Breakdown	/1000
Task 1: Parts Models	300
Task 2: Assembly Model	150
Task 3: Drawing Package (Assembly & Part Details)	300
Task 4: Balloons & Parts List	150
Task 5: Iso Shaded View	100

4. EQUIPMENT, TOOLS & MATERIALS

4.1. To be provided by committee

- Software: Inventor 2023 or latest version installed at Red River Campus
- Task 1: Parts drawing package and assembly example.
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- **Note:** If competitor wishes to use other software than that outlined within this scope, the competitor and coach mentor must contact the competition Chairperson no later than the official registration date outlined by Skills Manitoba in order to be accommodated

4.2. To be provided by competitor

- Calculator
- Pencils
- Paper
- Measuring instruments
- USB Stick

5. WORKSITE SAFETY RULES / REQUIREMENTS

5.1. No PPE required

6. NATIONAL COMPETITION ELIGIBILITY

6.1. A mark of 70% or higher must be scored by the gold medalist in each contest in order for them to attend the National Skills Competition

THE IMPORTANCE OF SKILLS FOR SUCCESS FOR CAREERS IN THE SKILLED TRADES AND TECHNOLOGY;

In response to the evolving labour market and changing skill needs, the Government of Canada has launched the new Skills for Success (former Essential Skills) model defining nine key skills needed by Canadians to participate in work, in education and training, and in modern society more broadly. SCC is currently working with Employment and Social Development Canada (ESDC) to bring awareness of the importance of these skills that are absolutely crucial for success in Trade and Technology careers. Part of this ongoing initiative requires the integration and identification of the Skills for Success in contest descriptions, projects, and project documents. The following 9 skills have been identified and validated as key skills for success for the workplace: 1.Numeracy, 2.Communication, 3.Collaboration, 4.Adaptability, 5.Reading, 6.Writing, 7.Problem Solving, 8.Creativity and Innovation, 9.Digital

FOR MORE INFORMATION PLEASE CONTACT:

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