2020
23nd ANNUAL SKILLS MANITOBA COMPETITION
CONTEST SCOPE

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 STTC – T230A

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:

Task:

- Create a 3 dimensional parametric parts and assembly model from provided engineering drawings and/or sketches.
- Certain dimensions are omitted and are required to be evaluated by the competitor. Competitors are required to bring measuring equipment to the competition.
- A “Working Package” is to be produced. In this case, a full assembly drawing. Competitor created assembly file needs to include:
    - Appropriate orthographic and/or cross section views, auxiliary views, details, and an assembled isometric view
    - Parts list and Ballooning of each component

- **Note:** Part files may or may not include such details as threading, countersunk holes, and patterns. **MATERIALS ARE REQUIRED**.

3. ASSESSMENT

3.1. Point Breakdown (Post-Secondary & Secondary)

Point Breakdown	/1000
Task A Parts Files	300
Task B Assembly file	300
Task C Working Package	300
Task D Evaluated Dimensions	100

4. EQUIPMENT, TOOLS & MATERIALS

4.1. To be provided by committee

- Software: Inventor 2019 or latest version installed at Red River Campus
- working drawings

- **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

FOR MORE INFORMATION PLEASE CONTACT:

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