1. Schedule

DATE: April 9, 2027	LOCATION NSCC Ivany Campus, Room 3337
TIME	**TASK**
8:00am - 9:00am	Orientation
9:00am – 12:00pm	Reverse Engineering Competition - Task 1 (3 hours)
12:00pm – 1:00pm	Lunch
1:00pm – 4:00 pm	Design Competition - Task 2 (3 hours)
4:00 pm	Competition concludes & judging will begin.

2. Purpose of the Contest

The purpose of the contest is to evaluate each contestant's preparation for employment in the field of Engineering Design and Drafting using CAD and to recognize outstanding students for excellence & professionalism in their field.

3. Criteria

Tasks that may be performed during the contest.

- Sketching, analyzing measurements and part measuring.
- Implement design changes by using problem solving, decision making and critical thinking skills.
- Detail drawing from assembly and blueprint document interpretation.
- Assembly from details.
- Parametric Modeling – Family of parts and/or assemblies.
- Export a variety of 3D model formats such as STL files with proper units and resolution for additive manufacturing, STEP files, .3mf files, 3D PDF.
- Designing for additive manufacturing/3D Printing using Fused Deposition Modeling. (FDM)
- Exporting drawings as multi-page 2D PDF files.
- Import a variety of 3D model formats such as STEP files.

3. Number of Stations / Allocations

Ten (**10**) workstation areas will be available. Each workstation area will include an office desk & chair, as well as access to a minimum of a three (3), 15A power source receptacles.

Note: It is the responsibility of the competitor to provide their own workstation computer and CAD software for the competition.

See section 6a: "*What Competitors Must Supply*."

4. Skills & Knowledge to be Tested.

Competitors will be required to demonstrate their ability to:

- Prior to the competition, the competitor shall create appropriate drawing templates with title block containing the information shown in the examples that will be provided after competition registration.
- Use CAD software to produce drawings that comply with the ASME Y14 Standards.
- Use CAD software to produce 3D parametric models of parts and assemblies from physical measurement, drawing files (PDF) and/or import reference model files.
- Use measuring instruments.
- Dimension and tolerance drawings to industry standards, including Geometric Dimensioning and Tolerancing (GD&T) as per ASME Y14.5-2018.
- Design components for additive manufacturing/3D printing using Fused Deposition Modeling (FDM)
- Generate export files for the purpose of 3D printing.
- Develop new product designs which will function properly within an assembly or on their own.

5. Prerequisites

To be eligible to compete, all potential competitors must:

- Be enrolled in a community college, university, private school OR be a registered apprentice with the Department of Labour and Advanced Education (Apprenticeship Agency).
- Be registered as a competitor with Skills Canada – Nova Scotia.
- Not have received their journey-person certification prior to March 1 of the competition year.
- Possess Canadian citizenship or Permanent Resident (Landed Immigrant) status and be a resident of Nova Scotia; or be a registered International Student. Competitors are responsible for verifying this information if requested.

- Have been earning post-secondary credits in a sector relevant to the one in which they wish to compete, (i.e., to compete in Mechanical CAD, the student would be earning credits in any mechanical engineering-related program) at any time during the academic school year. (September to June)
- Be able to show either current proof of enrollment in a post-secondary institution upon request of the Provincial Technical Committee (PTC) or Skills Canada – Nova Scotia.
- Have completed and submitted a signed release form.

Prerequisite Work

- Competitors are required to complete prerequisite work before this competition. Competitors must create drawing templates for use during the competition. PDF example of the template will be provided to competitors after registration.

6. Equipment & Clothing

a) Equipment and materials provided by Skills Canada – Nova Scotia

- A workstation area will be provided, that will include an office desk & chair, as well as access to a minimum of a three (3), 15A power source receptacles.

b) What Competitors Must Supply

- **A computer system with CAD software of choice to use during the competition.**
  - **CAD software must be preinstalled prior to the competition and able to run in an 'off-line' state without needing to acquire a license via the internet/VPN.**
  - **It is the responsibility of the competitor to ensure that the computer & software are compatible and functioning prior to the competition.**

***Note*:** Upon request, a desktop workstation computer, two monitors, mouse, keyboard, and 3D mouse can be provided for use during the competition. This workstation computer will have *Autodesk Inventor 2026* preinstalled. As these workstations are the property of the NSCC, there will be no administrative user access to be able to install additional software.

Requests for workstations must be made via email after receiving your confirmation of competition registration and a minimum of **four (4) weeks** prior to the competition date to ensure sufficient time to make arrangements. Requests must be sent to **Jason Cameron, Jason.Cameron@nscc.ca.**

- 6" measuring caliper. (slide, dial, digital)
- Paper, pens, and pencils.
- Competitors may bring textbooks, reference books, course handouts, course notes, software reference manuals, reference tables, and calculators.
  Note: All reference materials are subject to inspection and approval by the judges and cannot be shared between competitors.
- Appropriate attire suitable for a Provincial championship is required.

7. Evaluation & Judging Criteria

Contest Projects consist of work that will be marked according to the following:

Contest Tasks: 100%

Reverse Engineering Competition Task

25% - Measuring accuracy.

25% - Engineering drawing creation.

Design Competition Task

15% - Design element.

20% - Engineering drawing creation.

10% - Configuration element creation.

5% - Raytraced image and/or animation creation.

Please note: a detailed breakdown of the marking scheme will be given in:

1. SCNS27-5 Prerequisite Modeling Description.pdf
2. SCNS27-5 Parametric Modelling Project Description.pdf
3. SCNS27-5 Part Measurement Project Description.pdf

8. PTC Contact Information

Name	Employer	Email
Jason Cameron	NSCC Ivany Campus	jason.cameron@nscc.ca
Darrell Luedey	NSCC Ivany Campus	darrell.luedey@nscc.ca