
DSBN REGIONAL PRECISION MACHINING SKILLS CHALLENGE 2019
SECONDARY LEVEL SCOPE

CHAIR: Mr. Grant TenDen
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PURPOSE OF THE CONTEST: To assess the contestant's precision machining skills and trade knowledge through practical and theoretical testing.

EVENT DETAILS: **Date:** Wednesday, Feb. 27, 2019
Time: 8:00 am to 4:00 pm
Location: Niagara College Welland Campus, Rankin
Rm: TC14

SKILLS AND KNOWLEDGE TO BE TESTED:

The contest will be held over one day and will include, safety, print reading, machine set-up, and practical machining. The competitors will be broken into two groups and will complete two projects, (one lathe, and one mill) over the one day of competition.
(Duration 6 hours)

Each competitor will manufacture a number of parts using a standard center lathe. The day will consist of 6 hours of practical machining including the following tasks.
(Material 1018 CRS)

- Exterior cylindrical turning. -
- Exterior taper turning. -
- Threading and tapping. -
- Turning between centers.
- Assembly of parts. - Applied metrology. - Reading prints.

Each competitor will manufacture a number of parts using a standard ex-cello type vertical milling machine; the day will consist of 6 hours of practical machining including the following tasks. (Material 1018 CRS)

- Parallel and perpendicular milling.
- Drilling. - Tapping. - Assembly of parts. - Applied metrology. - Reading prints

NOTE: Measuring will be imperial units.

All competitors are required to provide the following:

MANDATORY: Eye protection, and safety boots (CSA approved). - 1 and 1-2 inch outside micrometers - 6 inch Vernier Caliper - Calculators will be allowed

Niagara College's machine shop tool crib will have tools available.

NOTE: Offhand cutter grinding is allowed.

SAFETY REQUIREMENTS: Competitors are required to follow all industry safety standards during the competition:

Safety is a priority at the DSBN Technological Skills Competition. At the discretion of the judges and technical Chair, any competitor can be removed from the competition site for not having the proper safety equipment and/or not acting in a safe manner.

- **It is mandatory for all competitors and teacher advisors to wear CSA approved eyewear (including side shields for prescription eyewear) AT ALL TIMES.**
- Clothing deemed suitable while machining (no loose straps, baggy sleeves etc.) shall be worn for the competition.
- **It is mandatory for all competitors and teacher advisors to wear CSA approved footwear.**
- Jewelry such as rings, necklaces, body pierced jewelry, etc. deemed unsafe by competition judges, or committee members, or by the host

college will be removed and stored by the competitor for the duration of the competition.

- To ensure fairness to all competitors, all tools and aids will be removed and stored by the competitor for the duration of the competition.
- Digital vernier calipers will be permitted.
- All digital readouts (DRO's) will remain turned off for the entire competition.
- The Vertical Mills will be indicated square by the host college prior to the start of the competition.
- The practical test will be administrated and marked in imperial (inch) units.
- The theory test will be administrated using imperial (inch) units.

EQUIPMENT, MATERIALS, TOOLS, AND SUPPLIES:

Equipment Supplied by the Competitor:

Please refer to the Tool List on the last page of this scope.

Project Material:

Turning competition project- Aluminum or Hot/Cold rolled steel
Milling competition project- Aluminum or Hot/Cold rolled steel

To ensure fairness for all competitors, tools other than those listed above will be taken away until the competition is completed. Sharing of tools or cutters will be allowed.

IMPORTANT: *Competitors will be allowed to bring their own cutting tools.*

PROJECT AND COMPETITION EXPECTATIONS: Competitors will comply with safety standards that apply to a machine shop setting. Competitors will complete the project with relationships to the drawing supplied.

JUDGING CRITERIA: Each project will be evaluated by Niagara College. In the event of a tie, the student with the most accurate tolerances will take precedence.

MILLING & TURNING

Compliance with occupational health and safety regulations	5.0	5.0
Compliance with dimensions and tolerances specified	40	40
Compliance with deburring and surface finish	5.0	5.0

Total 100 %

JOB INTERVIEW COMPONENT: You are not required to bring a resume, an interview workshop will be held for gold medalists moving on to provincial competitions.

CLOTHING REQUIREMENTS: Casual business attire must be worn with DSBN Technology shirts.

ENTRY: Students must register online at: [TechEd.dsbns.org /skills](http://TechEd.dsbns.org/skills) with all of the required information completed to be eligible to participate. Teachers should also forward a list of competitors participating from their school to the contest Chair, Grant TenDen, 7days prior to the date of the contest.

TRANSPORTATION: Students are responsible for their own transportation.

TEACHER'S ROLE: Instructors are expected to acquaint their student participants with all of the enclosed guidelines. Teachers supervising should accompany their students and can visit any time during the competition, but may not assist competitors during the challenge. Niagara College staff cannot be responsible for supervising DSBN students.

**** Competitors must be on time for their contest and may be disqualified if they do not sign-in at their contest site prior to the start of orientation. At the discretion of the technical committee chair, the competitor may be permitted to compete but would not receive any additional time. Each competitor will be given a number by their coordinator upon registration at the location and will be judged anonymously during the competition.**

DSBN Precision Machining Challenge

2014 Tool List

EQUIPMENT, MATERIALS, TOOLS, AND SUPPLIES:

Equipment Supplied by the Competitor:

Personal Protective

Equipment: - Safety Glasses

- CSA Approved footwear

-Vernier Calipers

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COMPETITION AGENDA: (Fill in as you see fit and appropriate for your challenge)

8:00- 8:30 a.m.	Sign in/ Arrival/ Set up
8:30 a.m	Orientation
9:00 a.m	Competition begins
12:30 p.m	***** Lunch *****
	Competition resumes
	Competition ends
	Judging
3:30-4:00	Clean up