

**2020 MICHIGAN SKILLSUSA CHAMPIONSHIPS  
TASK & MATERIALS LIST**

SKILL OR LEADERSHIP AREA:                     Mechatronics                    

**CONTEST LOCATION:**

DeVos Place  
303 Monroe Ave NW  
Grand Rapids, MI 49503  
616.742.6500  
<http://devosplace.org/>

**RESUME:**

Each student must submit a one-page printed resume before the contest start at the contest site (present to contest coordinator, not judges). The resume is no longer submitted online. This is the only time that resumes can be turned in. Failure to do so will result in a 10 point penalty.

**TASKS TO BE PERFORMED:**

**Knowledge Performance**

The contest will include a 50- to 100-question written knowledge exam assessing general knowledge of Mechatronics technology. Questions pertaining to mechanics, industrial electricity, fluid power systems (pneumatic and hydraulic), and programmable controllers will be included.

**Skill Performance**

The contest includes a PLC program and construction project. Teams of two contestants, in a timed event, will accurately and neatly build an electro-pneumatic system. Additionally, teams will program a PLC to perform a task. In this event, general interdisciplinary knowledge of the individual technologies and interactions in an integrated

**STUDENT MUST SUPPLY:**

- Tool box or tool pouch and belt
- Digital multimeter and test leads. Probes are required, and alligator test leads may be useful as well. The device should be capable of checking continuity, measuring resistance, DC voltage up to 30 VDC, and DC current up to 1A
- Set of Phillips screwdrivers
- Set of slotted screwdrivers
- Allen (hex key) wrench set in both metric and English sizes
- Needlenose pliers
- Diagonal cutting pliers
- Slip joint pliers
- Vise-grip (locking) pliers
- Combination square with level vial in head, 12" rule, min.

- 8-foot or longer measuring tape with English and Metric scales
- Small inspection mirror
- Two clean cloth (wiping) shop towels
- Two sharpened pencils
- Terminal–crimper Ideal 30-428 or equivalent
- Wire stripper(s), for wire sizes 24-16 AWG
- Hand-held calculator (optional)
- Notepad (size optional)
- One-page résumé
- PLC as described in National Contest Technical Standards

**TECHNICAL COMMITTEE WILL SUPPLY:**

- All specialized tools, materials and equipment needed to compete in the contest
- 24VDC, 3A power supply

**CLOTHING REQUIREMENT (if different from National contest):**

- Work shirt and pants
- Black or brown leather work shoes
- Safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.)

Revised 11/13/19

# Mechatronics Scorecard

		Contestant Number						
Items Evaluated	Possible Points	1	2	3	4	5	6	7
Mechanical Build	300							
PLC Program	300							
Written Test	200							
Mec Lab	200							
Résumé Penalty	0 or -10 only							
Clothing Penalty	0 to -50							
Team Penalty (if competing with less than the required number of team members)	-100							
<b>Total Possible Points</b>	<b>1,000</b>							