



## CONTEST SCOPE

*Program Name- Mechatronics*

*Contest Chair-Brian Potteiger*

*Contest Chair E-Mail – bpotteiger@rmctc.org*

**Reading Muhlenberg Career & Technology Center**  
2615 Warren Rd, Reading, PA 19604

<b>Contest:</b>	MECHATRONICS Contest
<b>Purpose:</b>	The MECHATRONICS contest is designed to evaluate a MECHATRONICS student's ability to complete a set of tasks quickly and accurately.
<b>Clothing:</b>	Contest appropriate clothing: <ul style="list-style-type: none"><li>• Long pants free from holes and tightened at the waist (jeans are permissible)</li><li>• Short sleeve shirt with no writing, logos, or graphics</li><li>• Work boots, no sneakers</li><li>• Safety glasses</li><li>• Students will not be penalized for clothing unless it is a safety violation.</li></ul>

## Equipment and Material:

### Equipment/Tools/Materials Provided by Host School:

Equipment that will be provided to all students:

- Digital Multimeter
- Breadboard
- Jumper wires
- Components for the circuits
- PLC Trainers (RSLogix 500 or LogixPro 500)
- Computers for use with PLC Trainer

### Equipment/Tools/Materials Provided by the Contestant:

What should the contestant bring with them to contest:

- Safety glasses
- Calculator - nonprogrammable
- Pen or pencil
- Contestants can supply their own PLC Trainer and computer or use that supplied by host school

## Scope of Contest

Each team of competitors will be expected to demonstrate their skills by completing the following tasks:

- Written test completed and scored individually
- Construct, evaluate and demonstrate ability to measure aspects of a combination resistor circuit
- Construct and demonstrate the workings of a pneumatic circuit from a drawing
- Troubleshoot a pneumatic circuit from a drawing and explain aspects of its' repair
- Construct, program and demonstrate the workings of a PLC program given a functionality list

There will be a 3-hour time limit for the completion of these skills.

## Additional Information

1. This competition is timed. You have 3 hours to complete all tasks.
2. You should:
  - a. Read and understand the general instructions and contest regulations.
  - b. Make certain you have all the required tools and materials.
3. All contestants will be randomly selected to start on a station.
4. While the contest is in progress:
  - a. You may not talk with the public, advisors or other contestants.
  - b. If a cell phone/smart device/smart watch is seen or used during the competition the contestant will be disqualified.
  - c. Non-verbal communication is not permitted to anyone except your teammate
    - i. I.E. hand gestures or signals to contestants or advisors
  - d. You may ask questions pertaining to the contest guidelines or materials to the event chairman or judges.
  - e. You may not leave your assigned work area without permission of the contest chair or the judges.
  - f. If you need to use the restroom you will need to inform the contest chair person.
5. When your contest is completed: (ALL JOBS)

- a. Clean your work area thoroughly.
  - b. Clean and pack your tools.
  - c. Report to the judges/contest chair and turn in your paperwork.
  - d. Judges will record your final time.
  - e. Follow all instructions given to you by the contest chair or judges.
6. Judging is based on:
- a. Written test
  - b. Safety
  - c. Constructing projects/systems
  - d. Troubleshooting systems
  - e. Overall job performance, completion, and use of equipment and tools.
7. Sequence of Contest
- a. Read contest sheets and plans carefully.
  - b. Check materials at your work station.
  - c. Notify judges if your materials are not complete.
  - d. Complete the project.
  - e. Carefully check/test your work.
  - f. Ask for a judge to score your work.
  - g. The judge will direct you to tear down your work and put the parts/materials back the way you found them.
  - h. The judge will direct you to move to another available work station. (They do not need to be completed in numeric order)
  - i. Once you have completed all stations - Pack your tools
  - j. Go to the judge/contest chair for your completion time
  - k. Follow the judge/contest chair instructions