Verification 1 – Electrical

The electrical verification is a test of your robot's wiring, pneumatic connection, and basic system functionality. For this verification, you should have all your components set up on a test board. A basic Arduino code that interacts with each of your components will be provided.

Verification 1 will take place during lab 3 in week 5. Please read the checklist carefully and be 100% prepared to demonstrate your work when asked.

Wiring Diagram (1 point)

You have created a standard wiring diagram using appropriate software. The diagram matches the actual circuit on your test board.

Sensors Test (1 point)

Both the magnetometer and the reed switch are connected to the Arduino using the proper ports and their reading values are presented on the Serial Monitor (using the provided Arduino code or your own code)

Actuation and Power Test (1 point)

The battery is connected such that it can power (at least) the Arduino, solenoid (using the MOSFET or a similar system in a way that it can be electrically actuated), and servo (using the voltage regulator). The piston needs to be connected to the solenoid. Also the tube that would connect to the tire needs to be connected. You do not need to connect or bring the tire.

Your robot can “sweep” the servo (turning it back and forth periodically) and actuate the solenoid (using the provided Arduino code or your own code).

Construction Quality (1 point)

All connections are secured and stress-relieved when necessary. It would be relatively straightforward to replace a wire if needed (traces between components are clear).

Components are mounted securely to the testing board and do not run the risk of falling off or otherwise becoming disconnected.

Presentation (1 point)

You presented your testing board on time and within the allotted time given.