Competition Rules for Lego Challenges

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Disclaimer

It is your responsibility to read and understand this document on a regular basis because we may update it from time to time.

If there are any exceptions or additions to the restrictions, they will be listed in each challenge. If you have any questions, please email the Lego Team at orclego@gmail.com.

If you are unsure about something, please ask!

Participation Rules

As a participant of the IEEE Ottawa Robotics Competition, **respect** your teammates, your supervisors, the volunteers organizing the event, and to all other attendees of any ORC event. Our goal is to allow you to **have fun** at the ORC while **learning** and **working together as a team** as you prepare for competition day.

Have fun and help each other out—it's all about participating!

Team Requirements

Your team must have **one** team captain and **one** assistant captain who will be responsible for approaching judges for any questions and/or clarifications about the rules. Team captains are responsible for making sure their team has fully read the rules of any challenges they are register in before competition day.

Any non-team member (team supervisor, parents, mentors, etc.) must act in an advisory role only. **Your team must do the work!** Otherwise, your results may be invalidated.

For every challenge your team is registered in, there must be one robot (i.e. 2 challenges = 2 robots). Your team may register into up to two challenges. Furthermore, **your team is expected to show up when it is your team's turn for a challenge, even if you are competing in two challenges**.

We strongly urge teams to have one team member periodically checking in on the competition areas to ensure they do not miss their challenges.

The Robots

Your team must build and program a robot **before** competition day, but you will still be allowed to modify your programs on competition day. The school's lighting conditions will affect sensors, so your team should bring their laptops and programs to adjust your programs.

Your robot must be built and programmed following the below specifications:

1. **Software and Programming Language:** Your team can use any program/IDE or language to program your brick.

2. **Programming Brick:** One EV3 brick or SPIKE brick must be used per robot.

3. **Non-Lego and Lego pieces:** **Unless specified by individual challenge rules,** your team can use any non-electronic Lego pieces from any Lego kit for robot construction. However, these pieces must not be modified in any manner (i.e. not cut up, burned, etc.). Non-Lego pieces are not allowed with the exceptions of (1) holding the drawing utensils in the Analog Devices da Vinci Challenge or (2) decorating the robot. **Note: plastic ramp covers are banned in all challenges.**

4. **Motors and Sensors:** Each robot may use **a maximum** number of the following motor and sensors:
   - 3 motors (medium and/or large)
   - 2 touch sensors
   - 1 gyro sensor
   - 1 ultrasonic sensor **or** 1 infrared sensor
     (in proximity mode only—the infrared beacon may not be used)
   - 2 colour sensors **or** 2 light sensors **or** 1 of each type

   The motors and sensors can from a NXT, EV3 or SPIKE kit.

5. **Robot Dimensions and Weight:** Maximum robot dimensions are 1 ft × 1 ft (30.48 cm × 30.48 cm) and the maximum robot weight is 1 kg, unless otherwise specified in the challenge rules. Judges will check your robot to make sure it meets our requirements throughout the day. If your robot changes dimensions while competing, judges may double check to see whether your robot still meets the requirements. This check does not apply when a part of robot falls off unintentionally while competing. For example, if parts were to fall off since two robots crashed into each other, judges will not double check dimensions. However, if parts of the robot unfold or open, judges can check the dimensions of the robot before continuing with the challenge.

6. **Remote Control:** Forms of remote control, such as Bluetooth, are not allowed, unless otherwise stated in a challenge. A robot must be autonomous and rely only on its original programming. Any actions your team may purposely do, like: clapping hands, issuing voice commands, Bluetooth, infrared remote, waving objects, etc., that causes a robot to begin behaving differently after the program has started is considered as human interference and is not allowed.

7. **Inspections:** With the addition of a new challenge requiring Bluetooth and remote control, inspections will be more frequent throughout competition day. In all autonomous challenges, it is very important that Bluetooth and/or remote control to be off while competing. In addition, teams can request for their opponent's robot to be inspected at any

point during competition day. Judges must be able to verify the Bluetooth/Wi-Fi status of your robot at any time.

8. **Challenge attendance:** Teams must be ready to compete when it is their turn. Given the nature of competition day, the schedule is subject to change without notice. Thus, teams must be near their challenge area and be ready to compete at any time. Teams will have 5 minutes to show up when judges call them before the team loses automatically.

9. **Projectiles:** Projectiles in any shape or form are not allowed. Robots must not intentionally shoot out/up objects or put any objects down in the competition arena/area during a match.