

# ROBOParade™

## 2016 ~ 2017 Rules



The parade features robot floats constructed and programmed by student participants. Attendees will be able to watch fully autonomous robot floats follow an indoor parade route while detecting other robots in front of them. The robot floats are programmed to stop and start without human help. It is a great STEaM (Science, Technology, Engineering, Arts, and Math) learning opportunity for young students. Judges will decide various awards. This is an ideal event for beginners in autonomous robotics. The Site Host may organize People's Choice Awards and raffle prizes.

### Team Registration and Qualification

- A team can enter only one robot float. If a coach has multiple floats, please register multiple teams.
- A team can have up to **5** team members.
- Students in grades 4-8 in the month of the event may participate.
- The registration fee per team is \$50 at the June 2, 2017 World Championship event. Registration fee for local events \$30.
- Each team member, as well as the coach, must bring the signed [Robofest Consent and Release Form](#) on the day of the parade.
- Each team must pass a **Test Parade** to ensure that all robot vehicles meet the specifications and functional requirements.
- Upon passing the test, the float ID (flag) will be given, which allows the robot to participate in the official parade.

### Judging

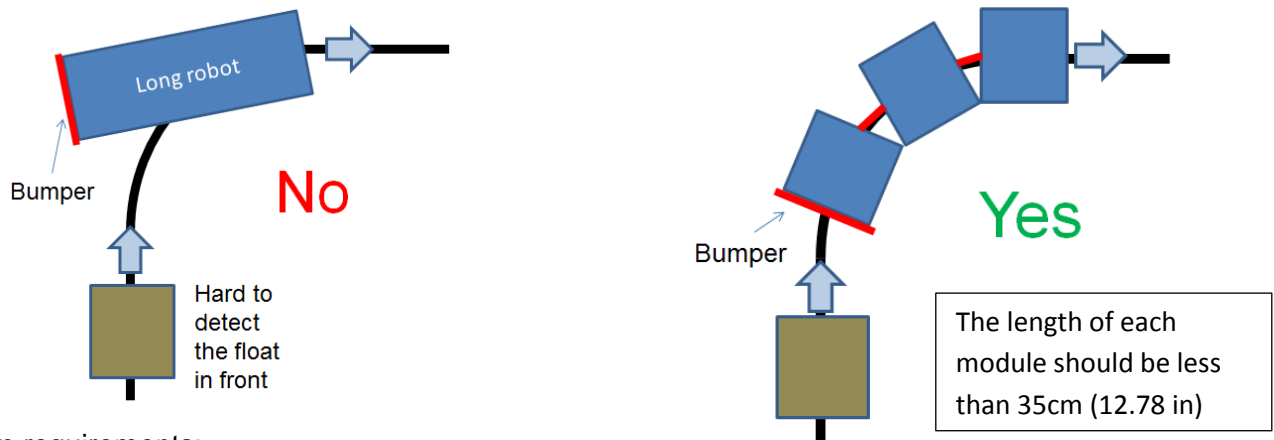
Each team member who participates in the official RoboParade will receive a medal. A panel of judges will score the team's performance using a rubric by observing teams all day and especially for official parade times. Judges will interview teams. Winner trophies will be awarded based on the overall scores. Special award trophies may be given to recognize an extraordinary aspect of a parade float.

### Robot Requirements

- Robot type: any, as long as it is fully autonomous.
- Number of robot controllers, sensors, or motors: unlimited.
- Each robot is required to carry a small flag with a number, which will be given once the robot passes the test parade.
- Each robot may have its own sponsor logos.
- There is no limitation on height or weight.
- Width should be less than 35cm (13.78 in)

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- The rear of the float must have a flat bumper at least 6.35cm (2.5 in) tall and 12 cm (5 in) wide and be 2.54cm (1 in) off the ground so that the robot behind is able to sense your robot using its sensors.
- There is no limitation on length, however: if overall length is longer than 35cm (13.78 in), it must have train-like flexible bending structures at curves as shown below.

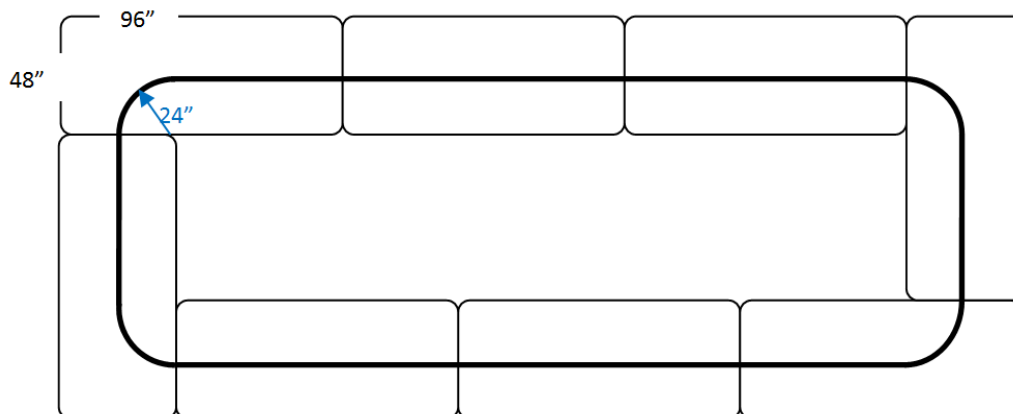


**Program requirements:**

1. Robot must have a reliable program to follow a black line on a bright surface.
2. Direction of the parade route may be clockwise or counter-clockwise.
3. Robot must have the ability to detect a vehicle in front of it and stop; then automatically re-start when the vehicle in front has cleared.
4. Wireless interaction between the robot and team players using sound, ultrasonic, or light sensors is encouraged.
5. Robot speed must be between 9 cm/sec and 18 cm/sec. The robot must display the current speed. Recommended the display interval is 1 second.

**An example of Parade Route**

Teams may purchase plastic folding tables (30" x 72") to construct a practice parade route. A suggested source for the tables can be found at: <http://www.buylifetime.com/Products/BLT/PID-22901.aspx> . Tables can be placed on the floor on crates without legs. Alternatively, a table covered with white paper or white vinyl table cover can be used. Standard black electrical tape can be used to make a closed rectangular shape with 4 rounded corners as shown in the picture below. 2" wide masking tape can be used to connect and hold tables together. Below is an example of a possible official parade route configuration.



*For more information about RoboParade, please email [robofest@LTU.edu](mailto:robofest@LTU.edu), or call 248-204-3568. The event is open to the public and admission is free.*