



2024

WRO - FUTURE ENGINEERS

Rules for the national round

You can access the official rulebook for the *World Robot Olympiad - Future Engineers Category* through this link:

<https://wro-association.org/wp-content/uploads/WRO-2024-Future-Engineers-Self-Driving-Cars-General-Rules.pdf>

The official rulebook outlines all the rules and guidelines that participants must follow. For national competition rounds, certain rules have been modified to make the competition more accessible and easier to participate in.

Participants are strongly encouraged to first review the official rulebook for the *World Robot Olympiad - Future Engineers Category*, which outlines the complete set of rules and guidelines. Once you have familiarized yourself with the official rules, please refer to the current document for any specific rules that have been adjusted for the national competition rounds.

Note that these adjustments are only applicable at the national level, and the original official rules will be strictly enforced during the international competitions.

Selection:

Each team will be required to participate in an online interview. The selection for the physical event will be based on the team's performance during this interview, along with the quality of their GitHub documentation. Any team that meets a certain threshold of excellence will be invited to participate in the physical event.

Engineering Documentation:

In addition to designing and programming the vehicle, teams must provide documentation that presents their engineering progress, the final vehicle design, and the final vehicle source code. This documentation must be uploaded to the GitHub public repository. **But there is no need to submit any hard copy in the national round.**

Surprise Rule:

A surprise rule for the national competition might be announced before the national competition. This rule can add / modify / change existing rules and the participant teams would have time to prepare before the event.

Repair Action:

If the vehicle bumps or touches the walls and the vehicle stops as a result of bumping or touching, a repairing action can be done, and penalties will be incurred. **Participants can take up to two repairing actions per run, and their score will be reduced by 25% per action.**

Parking:

There will be no parking challenge for the obstacle challenge during the national round.

Instead, the robot will have to stop at the starting section after three laps the same as the open challenge round.

Scoring:

Refer to the official rulebook - *Appendix 10, page 16*

	Requirements	Point Value	Total Available
1.	Driving Open and Obstacle Challenge		
1.1 - 1.3	Same as the international round (Successfully completing three laps and stopping in the correct section)		30
Additional points for Obstacle Challenge rounds:			
Not completed three laps			
1.4.1	One or more traffic signs were knocked out.	0	0
1.4.2	One or more traffic signs were moved. But no traffic signs were knocked out.	2	2
1.5	No traffic signs were not moved.	4	4
After the completion of three laps			
1.6.1	One or more traffic signs were knocked out.	2	2
1.6.2	One or more traffic signs were moved. But no traffic signs were knocked out.	4	4
1.7	No traffic signs were moved.	10	10
1.8	Final lap completed in the correct direction.	15	15
2.1	The team performed repairing action once.	Total points * 75%	
2.2	The team performed repairing action twice.	Total points * 50%	
3.	Engineering journal and vehicle documentation.	30	

Maximum score for the open challenge rounds: 30

Maximum score for the obstacle challenge rounds: 55

Maximum score on documentation: 30

The total maximum possible score for a team: 115

Disqualification:

1. Passing a traffic tower from the wrong side will not result in immediately stopping the round. Instead, that tower will be considered as “Knocked out” and removed from the game field.
2. Knocking out a tower will not result in immediately stopping the round. Knocked-out towers will be removed from the game field by the judge as soon as possible.

