

RULEBOOK

ROBO ROVER



ROBOVANZA9.0
2025-26

WELCOME TO ROBOROVER 2026

This Rulebook has been formulated by the RoboVanza RoboRover organizers, incorporating insights gained from previous editions of the event. It serves as a comprehensive manual detailing all rules, guidelines, and instructions that participants are required to follow throughout the competition.

Every effort has been made to ensure that the rules are clear, fair, and structured, safeguarding the interests of both the participants and the event.

Participants must note that all RoboRovers compete entirely at their own risk. The RoboVanza organizers shall not be held responsible for any damage, loss, or injury incurred by bots or participants during the event.

All participants are strongly advised to read this rulebook thoroughly. No rule stated herein shall be relaxed under any circumstances.

Teams are also requested to keep a copy of this rulebook accessible during the event for reference.



1. PROBLEM STATEMENT

Design and operate a RoboRover capable of efficiently performing assigned tasks within a dynamically defined event environment. The RoboRover will be manually operated and must respond effectively to real-time conditions and task requirements.

The challenge assesses the team's ability to demonstrate mechanical reliability, control precision, system integration, and operator skill under both individual performance trials and direct competitive conditions, while completing the assigned tasks within the minimum possible time, in compliance with all event rules and safety guidelines.

The problem statement emphasizes adaptability, robustness, and operational efficiency.

2. RULES AND BOT SPECIFICATIONS

- Both wired and wireless bots are allowed.
- The bot must be manually controlled.
- The total weight of the bot must not exceed 4 kg.
- The bot must fit within the maximum dimensions of 31 cm × 31 cm × 31 cm.
- The minimum dimensions of the bot must be 24 cm × 24 cm × 24 cm.
- A tolerance of up to 5% may apply to the dimensions of the bot.
- The battery must be a sealed, immobilized electrolyte type, and the voltage anywhere in the bot must not exceed 12V DC.
- Bots must not cause any damage to the arena. Any such incident may lead to disqualification, and the decision of the event coordinators or judges will be final.
- Bots must be designed to move in all directions, not only along a single axis.
- Any materials or robotic parts may be used as long as the bot meets the above specifications. The design and construction must be primarily the team's original work. Ready-made bots are not allowed.



- Any doubts regarding the design or construction of the bot must be clarified with the event managers before the event.
- All bots will be inspected before their run. Bots that do not comply with the rules may be disqualified. The decision of the referees or coordinators will be final.
- If a team is not ready when called for their run, the event coordinator reserves the right to disqualify the team.
- For wired bots, the wire must be long enough and properly managed to avoid interfering with the track or obstacles.
- During the race, all team members except the one controlling the bot must remain outside the track area.
- Penalties will add extra time to the team's total run time, while bonus zones on the track will reduce the total time.
- Any bot found entering the track without authorization or undergoing testing will result in immediate disqualification.
- Any damage suffered by a bot during the event will be entirely the responsibility of the team. The club and organizers will not be held liable.
- The organizers reserve the right to modify the rules if necessary.

3. TEAM INSTRUCTIONS

- Each team may consist of up to 4 members.
- Teams may be formed by students from the same institution, different institutions, or by individual participants.
- A maximum of 2 team members are allowed near the arena for calibration and assistance during the run.

4. GAME FIELD :

The RoboRover arena is designed to assess the mechanical integrity, control accuracy, and operational consistency of participating bots under dynamic operating conditions. The arena comprises multiple terrain types and structural elements intended to evaluate stability, maneuverability, traction, and overall system reliability. Bots must operate within the defined field while maintaining functional integrity throughout the run.



During the run, bots will encounter sequential sections that require controlled motion, precise navigation, and regulated speed. The field includes variations in surface characteristics, elevation transitions, and restricted movement zones that directly affect handling and alignment. Teams are expected to manage motion control effectively, ensuring stable operation and accurate positioning across all sections of the arena.

Bots must demonstrate adaptability and sustained control to successfully complete the run in accordance with the competition requirements. All participants will compete under the same field conditions as defined by the organizers. The track design may include slight variations, while maintaining the intended structure, difficulty level, and performance requirements.

5. GAMEPLAY

- The event will consist of two rounds.
- To qualify, the bot must successfully reach the finish line, while meeting the criteria set by the event organizers.
- In Round 1 only, a team may skip a maximum of one (1) checkpoint, which will result in time penalty.
- In Round 2, no checkpoints can be skipped. Skipping any checkpoint in Round 2 will lead to disqualification.
- Each team is permitted a maximum of three (3) resets during the entire race. Exceeding this limit will result in time penalty. Upon using a reset, the bot will be repositioned to the previous checkpoint; however, the race timer will continue uninterrupted and no time will be deducted or reset.
- A technical timeout will be granted only in the case of a bot failure. A pause of up to 1 minute may be requested to resolve the issue. This pause may be used once in Round 1 and up to twice in Round 2. During the pause, only two team members are allowed to enter the track to fix the problem.
- In Round 2, if a technical timeout is granted to one team, the opponent's bot must stop immediately and remain stationary until the timeout period is over.
- In case of tie (identical completion times), the tie-breaking criteria will be specified by the Event Heads during the event.
- All decisions made by the organizers shall be final and binding.



- **Conditions Considered as Bot Failure**

A bot failure includes, but is not limited to, the following:

1. The bot is not stuck on the track or any obstacle but is still unable to move despite control inputs being given.
2. Any critical component such as the battery, ESC/ESU, wheel, chain, or other essential part becomes detached.
3. Loose or disconnected wiring or connections that prevent the bot from functioning properly.

6. EVENT FORMAT

ROUND 1 - PRELIMINARY MATCH

- Each team shall be provided one official attempt to complete the designated RoboRover task .
- Only one authorized team member is permitted to operate the RoboRover during this round.
- No head-to-head (1-vs-1) or parallel runs will be conducted in this stage.
- Team performance shall be evaluated exclusively based on task completion time.
- Teams will be ranked in ascending order of completion time, with lower time securing a higher rank.
- Upon completion of all team runs, the official Position Table shall be announced.
- The top four teams listed in the Position Table shall qualify for Round 2.

ROUND 2 - FINAL STAGE (1-VS-1 MATCHES)

Match 1 – Winner's Match

- Teams ranked 1st and 2nd in the Qualification Position Table will compete in a 1-vs-1 RoboRover match.
- The winner of this match will be declared the Event Champion.
- The loser will advance to the Position Match.

Match 2 – Eliminator Match

- Teams ranked 3rd and 4th will compete in a 1-vs-1 elimination match.
- The winner advances to the Position Match.
- The loser is eliminated from the competition.



Match 3 – Position Match

- The winner of the Eliminator Match will compete against the loser of the Winner's Match.
- The winner of this match will be awarded Second Place.
- The loser will be awarded Third Place.

7. GAME ZONE AND TRACK

- An area around the field will be designated as the “Game Zone.” Only bot handlers and event organisers are allowed to enter this zone.
- There will be only one Start line and one Finish line. The track surface and course markings may have slight unevenness.
- The track layout may not be exactly replicated in the arena, and some or all obstacles may vary.
- A tolerance of up to 5% may apply to the dimensions of any zone or field element.
- Two boundaries will be marked on the track: an Inner Boundary and an Outer Boundary.
- Round 1: The bot must remain within the Inner Boundary at all times. Exceeding the designated boundary for the respective round will result in penalties
- Round 2: The bot must remain within the Outer Boundary. Crossing the Inner Boundary is permitted in this round.
If the bot exits the course boundary (outer boundary), it must restart from the previous checkpoint.

8.PENALTIES

- All penalties will be decided by the event organizers. In case of any dispute, their decision will be final.
- Every penalty will add extra time to the team's total run time. The exact time added will be announced during the event.
- If a bot goes outside the track boundaries, penalties will be given based on how much of the bot is outside:
Round 1:
 1. One wheel outside - time penalty will be added
 2. Two wheels outside - time penalty will be added
 3. If over half of the bot exits the track - time penalty will be added



Round 2:

- If the bot exits the course boundary , it must restart from the previous checkpoint.
- Intentionally blocking another team's bot in any manner will result in a penalty. Accumulating three (3) such penalties across the entire event, including all runs, will lead to disqualification. For wired bots using the bot's wire to block or interfere with another bot will be considered the same offense and penalized accordingly.
- Deliberately damaging another team's bot will result in immediate disqualification.
- Pushing an opponent's bot out of the track to sabotage their run will cause the offending team's run to not be counted.

9. DISQUALIFICATION

- Any bot that exceeds the maximum size limit or is smaller than the minimum specified dimensions will be disqualified.
- Bots must not cause any damage to the arena. If a bot damages the arena, it will be immediately disqualified.
- Failure to comply with the event rules will result in disqualification from the event.
- Any form of misbehavior will not be tolerated, and the concerned team will be disqualified from Robovanza.
- Teams are expected to uphold a high level of sportsmanship during the competition. Arguing with opponents, using offensive language, or engaging in any unsportsmanlike conduct may result in penalties or disqualification. This rule is crucial for promoting a positive and respectful atmosphere within the competition.
- The use of LEGO kits or LEGO-based components is strictly prohibited and will result in disqualification.



10. GENERAL INSTRUCTIONS

- All participants will receive a Certificate of Participation.
- Winners and runners-up will be awarded a Certificate of Merit.
- A participant who is part of one team is not allowed to participate in another team for the same event.
- Participants are sincerely requested to read this rulebook carefully. All rules mentioned herein will be strictly enforced without exception.
- Teams are also advised to keep a copy of the rulebook handy during the event for reference.

11. EVALUATION CRITERIA

- All decisions taken by the event heads regarding rules, penalties, disqualifications, match outcomes, and technical matters shall be final and binding.
- In case of any situation not covered in this rulebook, the event heads reserve the right to take appropriate action in the best interest of the event.
- The organizers also reserve the right to modify the rules or event structure if necessary for the smooth and fair conduct of the competition.

12. PRIZE POOL

- The Prize Pool for the event is Rs 12,000.

13. CONTACT US

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