



LINE FOLLOWING ROBOT (LFR)

Organizer: Robo Tech Valley & Green University of Bangladesh

Website: <https://robotecholympiad.org>

Address: Level 4, House 26/1, Rupnagar R/A, Mirpur-2, Dhaka-1216

Email: robotechvalley@gmail.com

Phone: 01758518707

Common Rules:

1. Students from the same or different institutes are allowed to form a team.
2. Participants can compete solo or as a team.
3. The competition is open to all.

Competition Rounds:

- Primary Round (Elimination Round)
- Second Round
- Final Round

A limited number of teams will qualify for the Final Round based on the total points in the Primary Round. The number of qualifying teams will be decided on the event day depending on participation.

Primary Round Details:

- Basic line-following challenges.
 - Selection based on time.
 - 4 checkpoints in the Primary Round and 5 checkpoints in the Second and Final Rounds.
 - Each team must place and calibrate their robot within 2 minutes after being called; otherwise, disqualified.
 - 5 minutes are allotted in the Primary Round, and 7 minutes in the Final Round to complete tasks.
 - Winning team is determined based on points.
 - Each team has a maximum of 5 restarts per round.
 - Only one member is allowed inside the arena during the main run.
 - Touching the robot during a run counts as a restart.
-



Arena Specification:

- The line width: **3 cm** (black line on white surface or white line on black surface).
- Start and Finish zones: **Black squares, 30 cm x 30 cm.**
- Distance between two adjacent lines: **At least 20 cm (center to center).**
- Minimum angle: **30° (acute angles).**
- Curved line radius: **At least 15 cm.**
- Line gap: **10 cm.**
- A **cave section** (max 3.5 feet long) will appear in the Final Round.

Robot Specification:

- **Height:** Max 25 cm
- **Length:** Min 15 cm – Max 25 cm
- **Width:** Min 15 cm – Max 25 cm
- **Weight:** Max 2 kg (including batteries)
- **Power:** Max 24V between any two terminals

Additional Rules:

- Teams must bring their own power supply.
- Readymade circuit boards are allowed, but **readymade LFRs are not allowed.**
- **LEGO or MECCANO** construction sets are not permitted.
- Maximum **two switches** allowed (including power and reset).
- No wired/wireless communication is allowed between the operator and robot — violation causes disqualification.

Gameplay:

- The LFR starts at the Start Zone and must finish at the Finish Zone.
- If multiple paths exist, the robot may choose any.
- The robot must not bypass checkpoints.
- If a team skips a section (from one checkpoint to another), it incurs a **penalty and restart deduction.**



Scoring System:

Let:

- **S** = Total Score
- **A** = Total points earned by the robot
- **T** = Time (total time taken)
- **P** = Penalty

Formula:

 $S = A + T - P$

Timer Points:

- **T (calculated)** = Actual time taken
- **T (total)** = Assigned total time
 - Primary Round: 300 seconds
 - Final Round: 420 seconds
- **Timer Point** = **T (total)** – **T (calculated)**
- Final **T (Total time)** counted only when all checkpoints are completed.

Penalties:

(Penalty points apply for rule violations, restarts, or skipped sections — details specified on event day.)

Flexibility:

(General flexibility clause — rules may be adjusted by judges or organizers if needed.)

Liabilities:

- Teams are responsible for their robot's safety and liable for any accidents caused.
 - The **Robo Tech Olympiad organizing team** will not be held responsible for incidents or damages.
-



Disqualifications:

A team can be disqualified for:

- Disrespecting judges.
- Violating safety or security rules.
- Showing misconduct toward opponents.

Other Conditions:

- The organizing committee reserves full rights to modify rules at any time.
- Any updates will be communicated to contestants.
- All participants must accept the judges' decisions as final.

