

# HOPE 25 Line Follower Competition Rules

Build, Program, Race—Follow the Line to Victory!

## Objective:

Design and program an autonomous robot to navigate a predefined line path as quickly and accurately as possible.

## Event Details:

Up to 4 members per team. All members must be currently enrolled students of a recognized institution.

## Prizes:

1st Place: ₹3000 | 2nd Place: ₹2000 | 3rd Place: ₹1000

## Rules and Guidelines:

### Team Registration:

- Teams must register online at [hope.gptcperinthalmanna.in](https://hope.gptcperinthalmanna.in) by **March 5, 2025**.
- Provide team name and member details during registration. Only one robot per team is allowed.

### Robot Specifications:

- The robot must be fully autonomous—no remote control or manual intervention during the run.
- Maximum dimensions: 25 cm (L) x 2/5 cm (W) x 25 cm (H). Weight is unrestricted.
- Power supply: Onboard batteries only (max 24V). External power sources are not permitted.
- The robot must use sensors (e.g., IR, ultrasonic) to detect and follow the line.

### Track Details:

- The track will consist of a black line (approx. 2–3 cm wide) on a white background (exact specifications announced on event day).
- The path may include curves, sharp turns, and intersections. Total length: Approx. 5–10 meters.
- Sample track layout will be available for reference at [hope.gptcperinthalmanna.in](https://hope.gptcperinthalmanna.in) one week prior to the event.

### Competition Format:

- Each team gets **five attempts** to complete the track. The best time from the five runs will be considered.
- Time starts when the robot crosses the start line and stops when it reaches the finish line (or fails to complete).
- Maximum time per run: 3 minutes. Exceeding this results in disqualification from that attempt.

## Run Rules:

- Robots must stay on the track autonomously. If the robot deviates completely off the line, the run ends, and time is recorded up to that point.
- Teams may place the robot at the starting line manually but cannot touch it once the run begins.
- No repairs or reprogramming are allowed during a run. Adjustments can be made between attempts.

## Judging Criteria:

- Primary Criterion: Fastest time to complete the track successfully.
- Tiebreaker: In case of a tie, accuracy (least deviation from the line) and consistency across runs will be considered.
- Judges' decisions are **final**.

## Construction Guidelines:

- Robots must be built and programmed by the team. Pre-built or commercially purchased robots are not allowed (though individual components like sensors or microcontrollers are permitted).
- No harmful mechanisms (e.g., liquids, flames, or sharp objects) are allowed on the robot.

## Event Day Requirements:

- Teams must arrive **at least 30 minutes before** the competition begins (exact time to be announced).
- Bring your own tools, spare parts, and batteries—organizers will not provide these.
- A brief inspection of each robot will occur before the competition to ensure compliance with rules.

## Penalties and Disqualification:

- Any manual interference during a run results in disqualification of that attempt.
- Unsportsmanlike behavior or violation of rules (e.g., using prohibited components) may lead to team disqualification.

## Contact:

For clarifications, reach out to the following before the event.

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