

# INNOVATEX 4.0 – Presidency University

## MakerSpace Cluster | Standard Rule Book Format

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### Event Overview

Field	Details
Event Name	“Trail Blaze” Line Follower Challenge
Cluster	MakerSpace
Event Type	Bot
Mode	Offline
Team Size	Team of 4 Members
Duration	Half Day(11am - 4pm)

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### Event Task / Objective

The event aims to foster practical understanding of robotics, sensor integration, and autonomous systems. It encourages innovation, real-time problem solving, precision, and teamwork while participants design an autonomous robot capable of navigating a complex line-following arena.

Participants must design and build a fully autonomous line follower robot that follows a thick black line on a white surface. The robot must navigate sharp turns, intersections, curves and crossovers without any manual intervention.

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### Design / Technical Specifications

- The robot must be completely autonomous and wireless. It may be circular or rectangular in shape.
- Maximum weight: **3kg (5% tolerance)** allowed.
- Must fit inside a **20cm × 20cm × 20cm** box at any time.
- Maximum voltage anywhere in the robot must not exceed **16.8V DC**.
- No wireless communication allowed (Bluetooth, RF, WiFi prohibited).
- Robot must be capable of handling certified track difficulty zones, each with predefined complexity.
- It must include a fail safe mechanism (auto-stop, auto-stabilize).

- Robot must support at least two speed modes (e.g “Precision Mode” for turns and “Turbo Mode” for straights). Mode switching must be autonomous based on sensor data.
  - Teams must declare battery capacity. Bonus point awarded for maximum distance covered per mAh consumed.
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## General Guidelines

1. Participants must adhere to the event schedule and submission deadlines.
  2. Teams are responsible for bringing their own equipment unless stated otherwise.
  3. Line thickness is 3cm (black line on white background).
  4. Track includes straight segments, curved paths, hairpin bends, acute angles, intersections, and crossovers.
  5. Shortcuts or skipping sections is strictly prohibited.
  6. Actual track will be revealed only on the event day.
  7. Organizers will provide basic power and connectivity support.
  8. Any unsafe or unethical behavior will lead to disqualification.
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## Safety Rules

- All equipment must be securely assembled, including battery, wiring and mechanical components.
  - Participants must follow event venue safety instructions.
  - No flammable, high-voltage, or hazardous materials allowed.
  - Spectators must remain outside designated operational areas.
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## Event Rounds / Structure

Round	Description	Duration
Round 1	Preliminary (Timed runs on standard track)	2 hour
Round 2	Semi Final (Top 10 teams compete on the track)	1 hour
Round 3	Final (Top 5 teams compete on the track)	1 hour
<b>Final Evaluation</b>	Judging & Prize Distribution	1 hour

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# Submission Guidelines

Final submissions must include:

- > A working robot
  - > A report (optional)
  - > Source code / schematic
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## Judging Criteria

Criteria	Weightage
Accuracy & Precision	25%
Adaptability	25%
Speed and Efficiency	20%
Design and Construction	15%
Technical Implementation	15%

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## Scoring Overview

Parameter	Max Points
Performance / Accuracy	30
Speed & Efficiency	25
Adaptability	20
Design & Construction	15
Code & Innovation	10
<b>Total</b>	<b>100</b>

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## Penalties & Disqualifications

Violation	Penalty
Exceeding weight/size limits	Disqualification
Wireless communications	Disqualification
Manual intervention during the run	-30 Points
Shortcuts/ Skipping sections	-30 Points/Disqualification
Unsafe Operation	Immediate Disqualification
Incomplete Work	-10 Points

Violation of Safety Zone	-20 Points
Misconduct or Unethical Practice	Permanent Ban

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## Awards & Recognition

Category	Prize	Remarks
1st Prize	₹15,000	Winner
2nd Prize	₹10,000	Runner-up
3rd Prize	₹7,000	Technical Innovation

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## Event Team

Role	Name	Department / Club	Contact
Faculty Coordinator	Dr.Divyarani MS	ECE	—
Event Head	Ananya Biju	CSE	9483574928
Technical Mentor	Mohammed Maaz	CSE	8618742470
Logistics & Media Lead	Rishi Kodaganur	CSE	9353391050
Operations Lead	Harshitha J	CSE	7338186326

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## General Instructions

- Follow all university and MakerSpace policies.
  - Respect judges, peers, and staff.
  - Any form of plagiarism or code reuse will lead to disqualification.
  - Decisions of the judges are final and binding.
  - Certificates will be awarded to all valid participants.
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## Official Note

This Rule Book serves as the official guideline for all MakerSpace Cluster events under INNOVATEX 4.0, Presidency University.

Any updates or clarifications will be communicated officially via the MakerSpace WhatsApp community and notice board.