

## **Robot Specifications:**

To ensure fairness and safety, all competing robots must adhere to these specifications:

### 1. Dimensions:

- Length: 25 cm-30 cm
- Breadth: 25 cm – 30 cm
- Ground Clearance- 2cm
- Weight- Less than 5kg

Any robot outside these dimensions will be disqualified before the event begins.

### 2. Control Mechanism:

- Allowed: Joystick, RC remote, wired, or Bluetooth control.
- Not Allowed: Fully autonomous navigation or pre-programmed path following.

### 3. Build Requirement:

- The robot must be hand-built by the participants.
- Commercially pre-assembled kits are prohibited — however, off-the-shelf components (motors, wheels, sensors) may be used.

### 4. Power Source:

- Battery-powered only.
- Swapping batteries is allowed between matches but not during a live round.

### 5. Safety Requirements:

- Robots must pass a pre-event safety check conducted by officials.

Track specifications:

Round 1: Pac Racers

- Arena Layout: Maze-style floor setup with narrow lanes, sharp turns, and designated safe zones.

- Bot Roles: Each team alternates between Runner (Yellow) and Chaser (Red).

- Objective:

- Runner → Survive as long as possible while evading capture.

- Chaser → Tag the Runner within the arena boundaries.

- Controls: Bots operated via Joystick/Bluetooth for real-time driving precision.

- Scoring:

- o Points for survival time (Runner) and successful tags (Chaser).

- o Penalties for obstacle collisions or unsafe maneuvers.

- Focus Skills Tested: Reflexes, spatial awareness, tactical movement, and precision driving.

- Advancement: Top-performing teams progress to Round 2: EnduroRush Challenge.

Round 2: EnduroRush Challenge

- Track Width: 40-45 cm, designed for both speed and precision control.

- Surface & Obstacles:

- o M-Sand and Gravel sections to test traction and stability.

- o Ramps with varying inclinations to challenge climbing and descent control.

- o Pipes and structured obstacles for maneuvering skill.

- Flooring: Smooth base ensures fair navigation — not an extreme off-road track, but

demanding in balance and control.

- Objective: Maintain high speed while clearing obstacles efficiently and reaching checkpoints.

- Skills Tested: Bot endurance, adaptability to surface changes, obstacle negotiation, and

consistent driving precision.

- Advancement: Final rankings determined based on completion time, penalties, and obstacle

handling performance.