

BOT BATTLE ARENA – EVENT SPECIFICATIONS

Robot Specifications:

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

1. Dimensions: Length: 25–30 cm, Breadth: 25–30 cm, Ground Clearance: ≥ 2 cm, Weight: ≤ 5 kg. 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. 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: Payload Pull

Arena Size: 3 m \times 3 m square.

Pickup Zone: 50 cm \times 50 cm (marked with coloured tape).

Scoring Zone: 50 cm \times 50 cm, placed diagonally opposite the pickup zone.

Lane Width: Minimum 40 cm to allow smooth bot movement.

Payloads: Spherical/cylindrical objects, 5–8 cm diameter, distinguishable by colour.

Round 2: Zone Control

Arena Size: 3.6 m \times 3.6 m.

Layout: 3 \times 3 grid (tic-tac-toe style).

Each Zone Size: 1.2 m \times 1.2 m.

Zone Marking: Color tape or cones/flags placed at corners.

Bot Entry: Zones must be fully accessible from any side.

Round 1: Payload Pull

Arena Layout: Smooth, marked arena with pickup and scoring zones.

Objective: Transport payloads from pickup to scoring zone, one at a time. Payload scoring: Red = 10 points, Blue = 5 points, Green = 3 points. Bonus: +5 points for delivering all three types of payloads.

Match Twist: At random intervals, a light will turn on. All bots must stop for 5 seconds before resuming.

Duration: 3 minutes.

Skills Tested: Speed, accuracy, and strategy in choosing payloads.

Round 2: Zone Control

Arena Layout: 3x3 grid similar to tic-tac-toe.

Objective: Secure a zone by staying inside it for 20 seconds. Opponent can overwrite control by staying in the zone for 10 seconds.

Scoring: Claiming a zone = +10 points. Holding a zone until the end = +5 points. Overwriting an opponent's zone = +7 points.

Duration: 4 minutes.

Skills Tested: Precision in positioning, tactical movement, and consistency in zone holding.

Event Rules:

No intentionally damaging other bots (immediate disqualification).

No lifting, grabbing, or ramming allowed.

Time penalties for stalling or intentional inactivity.

Convenors' decision is final.