

Aryabhata Science Centre State Meet 2024

Jantrik Jatri - A State Level Autonomous Robotics Competition.

To design a fully autonomous robot that can follow a black line, collect object/objects placed on the track and deliver them to the workstation as fast as possible.

Contest description:

- The robot must follow the black line on the track and collect objects placed on the track.
- The ranking is determined by the time taken to complete the course and the points collected during the run.
- The time is measured from the referee's signal to the robot stopping at the designated workstation.
- The robot must not be touched or interfered with during the run, and external connections are only allowed for the power source.

Robot Specifications:

The robot is fully autonomous and must not be dangerous.

- Maximum size: 40cm (length) x 25cm (width) x 25cm (height).
- Maximum weight: 7 kg.
- Maximum voltage between motor terminals: 12V.
- The teams must provide photographs and text descriptions of the robot and team for publishing purposes.(The submission will reward extra points).

Playing field :

- The playing field is 10ft x 10ft with a white ground and a black line, 1.5 cm wide, marking the track.
- The track may have discontinuations or breaks, but the line does not cross itself.
- The starting and finishing lines are marked by two perpendicular marks 5 cm off the track.
- The playing field border is at least 15 cm away from the line.

There are no objects in the first qualification round. Multiple objects will be placed on the track. For a successful run, the robot must move all the objects and deliver it to the workstation.

a) Object:

- Its size is at least 4 cm(w) x 4 cm(h) x 4 cm(l) , and weighs a maximum of 100 g.
- The robot may grab/hold/pick it and move it to the workstation but must not damage the arena while moving the objects.

b) Line cut-off:

- The line will have discontinuation at any place for a maximum 10 cm and continue anywhere within $\pm 15^\circ$ from the original direction.
- Indicating the discontinuation with a visible light will award extra points.

Power of officials and liability:

- The referee may disqualify a robot or participant if they violate the rules.
- The organizers may change the rules without prior notice.
- Participants are responsible for their robots and safety and will be liable for any damages caused.
- The organizers will not be held liable for any accidents or damages caused by participants or their equipment.

Participants are requested to visit the website (<https://astec.assam.gov.in/>) for any new updates.

Event Coordinators:

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