



# ROBORYTHM

#### **Overview**:

Teams have to build an autonomous robot that can follow a black line and keep track of directions while going through the maze.

#### Rules for Roborythm are as follows:

- <u>Vehicle dynamics</u> The maximum size of a robot is 20 x 20 cm. Dimensional limits for robots shall be strictly enforced. Prior inspection of the robot will be done by the organizing team before the start of the competition. A team can bring only one robot for the participation.
- 2. <u>Course time</u> Time is measured from the start line until the robot crosses the finish line. A robot is deemed to have crossed the line when the forward-most part of the robot contacts or crosses over the line.
- 3. <u>Time limit</u> A maximum of 5 minutes is allowed for a robot to complete the course. If a robot is unable to complete the course in the allotted time that specific run will be terminated.
- 4. <u>Attempt limit</u> A maximum of 3 attempts will be given to each team, the validity of each attempt will expire once the elapsed time exceeds 5 minutes.
- 5. <u>Autonomous control</u> Once a robot has crossed the starting line it must remain fully autonomous, or it will be disqualified.
- 6. <u>Losing the path</u> Any robot that loses the line course must start again from the latest checkpoint crossed by the robot.
- 7. <u>Trial run</u> Teams can have a trial run before the events start but not once it gets started.
- 8. <u>Changes</u> No changes in the robot or the program will be allowed once the robot has started its run.

## Scoring criteria:

• Checkpoint

A = 25 points will be awarded if the robot crosses the checkpoint but it will be counted only once for each checkpoint.

Time taken

 $\mathbf{B} = (180 - \text{Total time taken in seconds to complete the run) points will be awarded for the time taken.$ 



: eesa@nirmauni.ac.in



- Attempt taken
  - C = 200 No. of attempts taken by the robot to reach the destination\*50.
- Checkpoint Restart
  - $\mathbf{F}$  = Total no. of restarts taken at all checkpoints\*10
- Penalties

Total = (A+B+C)-F

# **Team Specification**

A team may consist of a maximum of 4 participants. Students from different educational institutes can form a team.

# ELIGIBILITY

All students with a valid Student identity card from their respective educational institutes are eligible to participate.

## Arena Specification

- The area of arena will **270 cm** \***300 cm** (9 ft\*10\* ft)
- The robot has to start the run from the **Start** box and reach the **End** box.
- The paths will consist of a black line that the robot has to follow to reach the destination.
- Checkpoints will be assigned on the event day.
- The width of the black line would be 30mm.

