COGNIZANCE 2K24

Faculty of Technology & Engineering

Chandubhai S Patel Institute of Technology

Department – Electrical Engineering

Title of Technical Event: Robo race

Event Coordinators:

Faculty Coordinators

1. Prof. Mohammed Soaib Saiyad, 8485916188
2. Prof. Jignesh Patel, 9978794997

Student Coordinators

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Event Description:

Gear up for an exhilarating showcase of your skills at “Robo Race”- an ultimate race that brings a fusion of technology and strategy on full display! It presents a thrilling challenge where participants are tasked with crafting their wired or wireless bots within specified guidelines, aiming to attain maximum speed, outpacing competing bots on the designated track, and crossing the finish line in the shortest possible time. "Robo race" isn't just a race; it's a celebration of innovation and creativity.

Team Specification:

No. of Participants per entry/ Team: **4 participants**

Task:

- Each competitor must bring a miniature, hand-built robot car for the competition.
- The goal is to build your own robot, either wired or wireless, within the required specifications to obtain the highest speed possible to cross the finish line in the shortest time possible.
- Any kind of obstacle, such as numerous turns, sand, a suicide point, dig and others, could be present on the path, your robo should be able to overcome every obstacle.
- The team with the shortest time wins!

General Rules and Regulations:

- **Fair Play**: Teams are required to follow the rules of sportsmanship and fair play. Any form of violence or argumentative behaviour's is not permitted.
- **Final Decisions**: The coordinators and organisers of the event have the last say in all matters. The appointed event officials should be contacted with any disagreements or issues.
- **Disqualification**: Individual that disobeys the rules or acts improperly may be eliminated from the competition by the event organisers.
- **Safety**: During the race if anything happens to the robo due to the obstacles', the university would not be held accountable. The group itself is accountable for the robot's safety.

Rounds:

It is a one round game only; each automobile will only have one opportunity to run on the track. The winner will be determined by taking the shortest amount of time to finish the race.

If there is a tie, another chance will be given to the participants.

Event Rules:

Robo:

- **Size:** The Robot must fix inside a box of 40 cm length, 25 cm width, 25 cm height.
- **Type:** The robot must have a minimum 4 number of wheels. The robot control can be wired or wireless as per your choice. If it is wired, the cord length (from your controller to robot) must be minimum 1.5 metres long approx.
- **Clearances:** It is recommended that the ground clearance (gap between lowest car body part and ground) should be minimum 2.5 cm approximately.
- **Power:** The robos must be electric cars only. There are no limitations on the type of power source you use or its capacity. However, if you need AC source, make sure the cord is long enough so that it can traverse over the track.
- The maximum distance between the wheels of robot cannot be greater than 25 cm However we recommend to keep the distance as low as possible so that the robot can easily traverse between the lines of the track. Also, it should not be less than 10 cm (Centre to Centre distance). Tolerance of few centimetres will be allowed.
- Ready-made toys, cars, and monster trucks and lego bots are not allowed. Pneumatic & hydraulic systems are prohibited as well.
- Any robotic parts/building material can be used until the robot meets the above specifications and if the design and construction are primarily the original work of the team.
- There will be different types of obstacles on the track which are mentioned below. So, design your car in such a way that it can overcome those obstacles. For example, a car with very small diameter wheels may get stuck on the obstacles.

- Student Coordinators reserve the right to ask for the explanation of the robo. The coordinator can change the rules of the race depending on the situation.

Track:

- The track width will be 25-30 cms.
- The track length will be approx. 40-50 metres.
- Some critical obstacles on the track are mentioned below:
- Sand Path: "Navigate the challenging sand path as your robot conquers the shifting terrain, testing its agility and endurance in this thrilling robo race adventure."
- Marbel Path: "Embark on a precision test as your robot glides through the intricate marble path, showcasing its dexterity and control in this riveting robo race challenge."
- Pipe Path: Here your robots navigating skills will be tested through ups & downs.
- Suicide Point: Experience the thrill of the suicide point, where your robots will be jumping from a height of approximately 20-25 cms.
- Slippery Path: "Navigate the slippery path, where robots will dance on the edge of control, showcasing agility and balance in this slippery challenge of the robo race."
- The track material would be mostly cardboard, wood & metal.
- During the run, team may change battery or fix minor technical issues.

Race:

- The robot must start behind the starting mark and is considered to have crossed the finishing line.
- No teams are allowed to touch the car during the race. However, there might be certain exceptions which will be mentioned on the race day.
- There would be checkpoints on the track after some distance. If the robo loses the track or gets stuck or stop functioning, the operator can check the robo and restart from the previous checkpoint. However, respective penalties will be applied as well.
- If there is a tie, both bots will be selected for next round.
- Rules & Regulations may change without prior notice, by the Event organizers.
- Here's a video for your reference: https://youtu.be/awsW1hK8g9w?si=DX7fqMVyqOeTYPHI

If you have any questions or queries, you can contact any of the student coordinators mentioned above.