OTOMATIKS®

PROUDLY PRESENTS

ROBOTICA-25

6TH NATIONAL LEVEL ROBOTICS COMPETITION

ROBORACE

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1. GENERAL INFORMATION

In the Robo Race event, teams will design robots that tackle a series of challenges on a competition field. These robots have to be designed as per specification and the event features different missions designed for various age groups, each becoming progressively more complex. All robots should follow the rules which has been provided that tests the creativity and problem-solving abilities of the teams, especially at international levels.

In the Robo Race category, students will focus on developing the following skills:

- **Coding Skills & Robotics Concepts:** Understanding how to perceive and interact with the environment, control robot movements, and navigate through the competition field.
- **Engineering Skills:** Building a robot that can push, lift, or manipulate objects of various shapes and sizes.
- **Strategy Development:** Formulating and optimizing strategies to solve specific missions efficiently.
- **Computational Thinking:** Engaging in practices like tinkering, debugging, collaboration, and iterative problem-solving.
- **Teamwork and Creativity:** Developing strong communication, teamwork, and creative problem-solving skills within a competitive environment.

Challenges

The missions and fields in Robo Race are tailored to fit different age groups, with increasing levels of difficulty. They will face:

- **Challenging Routes:** Navigating complex paths on the field
- **Technically Advanced Missions:** Performing actions such as pushing, lifting, or grabbing game objects with precision.
- **Random Game Elements:** Adapting to multiple random scenarios introduced during the competition.
- **Variety in Game Elements:** Interacting with objects of different shapes, and sizes.
- **Precision Requirements:** Meeting accuracy demands, such as targeting large areas or small, precise spots on the field.
- **Increased Complexity:** Combining all these elements to push teams toward more intricate designs and programming strategies.

As teams participate of ROBOTICA, they will have the opportunity to grow and improve their robot designs and problem-solving techniques, gradually tackling more complex missions.

2. EVENT DETAILS

- Date: February 7, 2025
- Venue: VIT University, Chennai, Tamil Nadu
- Registration Fee: Rs. 800 per team
- Team Size – Maximum of 2 persons per team

a. Category

Junior	- Grade 3 to 5
Seniors	- Grade 5 to 8
Super Seniors	- Grade 9 and above

b. Registration

Registration can be done by visiting the website https://robotica.org.in/ or Contact +91-90432 09448 so that our staff will guide you through registration process.

3. RULES & REGULATION

a. General Rules:

i. This is racing event so fastest and most balanced robot will win.

ii. Each team can have maximum two members.

iii. Students from same institutes only can form a team.

iv. Each member of the team must contain the identity card of his/her respected institute.

v. The robot should not damage the arena.

vi. No test practice will be allowed on the arena.

vii. The robot must not leave behind any of its parts during the run; else it will result in disqualification

viii. The competition is based on time trail system.

ix. Wires should remain slack during the course of the run. Pulling the wire to aid the robot in traversing may lead to disqualification.

x. Your robot must be ready when call is made for your team.

xi. If any of the robots starts off before start up call, the counter would be restarted and the machines will get a second chance. If repeated again then team will be disqualified.

xii. Unethical behaviour could lead to disqualification. Faculty co-ordinators have all the rights to take final decision for any matter during the event.

xiii. Judge's decision will be considered final.

xiv. Certificates of Participation will be given to all the teams that will participate in the event, but not to the teams which get disqualified due to disobeying any of the competition rules. *Co–ordination committee reserves the right to add or update any rule.

b. Robot Specification

i. The maximum dimension of the robot can be 25 cm x 20cm x15 cm (l x b x h).

ii. The robot may be wired for Junior category and wireless for Senior and Super Senior category.

iii. The length of the wire (for wired bots) should be long enough to cover the whole track and wire should remain slack during the complete run.

iv. Maximum weight must not exceed 3 kg.

v. The participants will be provided with 220 Volts, 50Hz standard AC supply. Participants will have to themselves arrange for adaptor or batteries.

vi. The machine must not be made from Lego parts, or any ready-made kit, if we find such machine it will be disqualified.

c. Batteries & Power:

i. The machine must be powered electrically only. Use of IC engine is not allowed.

ii. Batteries must be sealed, immobilized electrolyte type (gel cell, lithium, NiCad, or dry cells).

iii. The electric voltage anywhere in the machine should not be more then 12V DC at any point of time.

4. TRACK SPECIFICATION

a. The track surface and course line may have unevenness.

b. There will be certain obstacles in the race track which will try to slow down the bot.

c. The design and size of the track may vary from that shown in the pictures.

d. Arena may consist of Switch Bridge, speed breakers, marble pit, slippery path, rotating disc, curve ramp down, seesaw etc.

5. POINT SYSTEM

Model Track with Point System is updated in the webpage robotica.org.in. Do

Checkout this page

Contact Information:

For any queries or additional information, please reach out to **robotica25@otomatiks.in**.

We highly encourage students and robotics enthusiasts to participate in **ROBOTICA 25** and showcase their talents. This is an excellent opportunity to compete at a national level and push the boundaries of innovation.

We look forward to seeing your incredible robots!

Best regards,

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