NATIONAL ENGINEERING ROBOTICS CONTEST 2019

THEME: SUMOBOT CATEGORY

National Engineering Robotics Contest

A joint venture of **NUST** and **STEM Careers Programme (HEC**)

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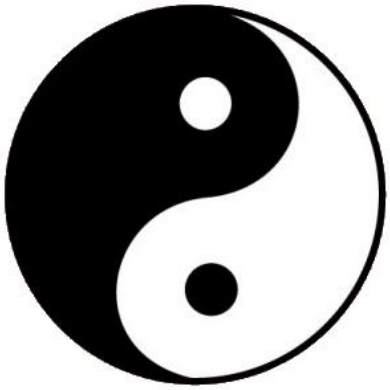
Introduction

Do you want to see your bot thrashing other bots out of arena, do you want it to display its power and vanquish everyone in its way then we have a special event for you. Introducing first time in NERC, SUMOBOT is an event you do not want to miss. An event where two bots struggle to push its opponent out of the ring. First one out loses while the other brags the victory.

Arena

Bots will fight in an arena made of cardboard or plywood cut in circular shape of diameter usually 40 inches (variable).

The schematics of arena are as follows:



The bot will start from the two small circles in the arena.

Robot Measurements &Weight

1. Robot should not exceed 15*15 inches(L X W dimensions)
2. Bot can be of any shape but shouldn't be intended to damage the opponent's robot (no use of additional piercing material).
3. There is no restriction on the height of the robot.
4. It is not allowed to indulge any process in design that would aid to flip the opponent's robot.
5. Weight of the robot should not exceed 3 kg (±10% Tolerance).
6. **Microcontroller used**: Arduino Uno or any other type but it shouldn't be microprocessor such as Arduino Due.
7. Li-ion or Li-po batteries are acceptable.
8. The robot is remote controlled and any kind of sensor that would automate the robot to remain within arena is not allowed. Jamming the opponent's control device is not allowed.
9. Sticky substances to improve the grip on arena are not allowed.
10. Use of magnets or any such material to forcefully push the robot is not allowed.

Rules and Regulations

1. Total time for one match would be 3 min.
2. Two robots will fight in a single match i.e. 1 vs 1
3. The player has to push the robot outside the arena to earn points.
4. There would be 3 rounds in the total time of 3 min i.e. (1x round = 1 min.)
5. The team who does more drag-outs will win a round and receive SUMO point.
6. The team who wins first two rounds or receives two SUMO points within the time limit, would win.
7. If the time has ended before any team gets 2 SUMO points and one team has 1 SUMO point, that team would win.
8. If none of the team has scored a SUMO point within the time limit then extra time would be allotted and in that time the team that first drag-out the opponent's robot would win.
9. The Contest judges may stop any robot at any time if they feel that it is performing, or is about to perform, any action that is dangerous or hazardous to people or equipment.
10. In all matters of interpreting the rules before and during the Contest and in any issues not covered by these rules, the decisions of the Contest Judging Committee will be final

Teams

The Robots can be built by teams of currently registered students from Engineering Institutions, Polytechnic Institutions, schools etc. Each team can comprise of Maximum 4 members.

If the students from two different Institutes/Universities join hands and form a team in collaboration then the name of the Institute/University with maximum number of students in such a team would be registered.

Disqualification

The following behavior shall be considered for disqualification by the referee and the team could possibly be disqualified:

• Attempting to damage the game field.

• Performing any act that fails to comply with the spirit of Fair Play.