



URECKON'20

PRESENTS

ROBO-DANGAL

Let the war begin!

Bring on your ready to battle robots in a one-on-one brutal combat competition where the aim is to immobilize your opponent's bot and stand victorious.

At the end it's all about Power & Strength.

VENUE : UEM , Kolkata Campus

DATE : 15th and 16th February 2020





RULES & REGULATIONS

BOT SPECIFICATIONS:

1. **The weight category is : 15kg , 30kg.**
2. There are no restrictions on the dimensions of the bot.
Any external device like remote controls, batteries, power supply and adapters and source tanks are not included within this dimension.
3. The robot specification must be maintained strictly during the entire event. Failing to do so will lead to immediate disqualification of the team.
4. There are no restrictions of number of motors used in making the bot.
5. *Both Wired and Wireless bots are allowed.*

MOBILITY:

Methods of mobility include:

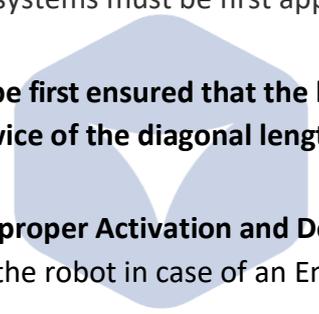
1. Rolling (wheels, tracks or the whole robot).
2. Non-wheeled robots with no rolling mechanism in contact with the floor such as linear- actuated legs and novel non-wheeled drive systems come under this category.
3. Jumping and hopping is **NOT ALLOWED.**
4. Flying (using rotors, air foil, hot air or helium balloons etc.) is **NOT ALLOWED.**





BOT Control Requirements:

1. The teams using wireless remote control devices are recommended to have at least two frequency wireless remote control circuit which may be interchanged before the start of the race to avoid frequency interference with other teams.
Although, if at all any such electromagnetic interference occurs while using wireless remote control devices, the coordinators will not take any responsibility, and thus there won't be any restart from our side.
2. Remote control systems from toys might be used. Remote control systems available in the market may also be used. Non-standard or self-made remote control systems must be first approved by the organizers of the event.
3. **For Wired bots, it should be first ensured that the length of the wire is greater than the twice of the diagonal length of playable arena.**
4. Every robot should have a **proper Activation and Deactivation Switch** in order to disable the robot in case of an Emergency.



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BATTERY AND POWER:

1. The machine must be powered electrically only. Use of an IC engine in any form is not allowed. Power supply has to be ON-BOARD. On board batteries must be sealed, immobilized-electrolyte types (such as gel cells, lithium, NiCad, NiMH, or dry cells).
2. The electric voltage between 2 points anywhere in the machine should not be more than 24V DC at any point of time. For using transformers as source, they should be verified by the organizers and output cannot be greater than 36V DC. (A variance of 2V would be considered due to batteries not being exactly equal to said voltages).
3. All efforts must be made to protect battery terminals from a direct short and causing a battery fire, failure to do so will cause direct disqualification.
4. Use of damaged, non-leak proof batteries may lead to disqualification.





5. Special care should be taken to protect the on-board batteries. If judges find that the battery is not properly protected, then team will be disqualified immediately.
6. Change of battery will not be allowed during the match. (Exemption can be made in case of battery damage).
7. There should be a provision for a 'Kill Switch' which should be easily available to stop the robot in case of any uncontrolled robot response.
8. It is suggested to have extra battery ready and charged up during competition so that on advancing to next level, you don't have to wait or suffer due to uncharged battery.

GENERAL RULES:

- A team can have a **maximum of 6 members**.
- No two teams should participate with the same robot(s) for this event. A team can have participants from different schools or colleges.
- Before entering the arena, the team members need to sign a *NO OBJECTION FORM* provided by the organizers of ROBO-DANGAL.
- Non-students can also participate.
- **The decision of the Event Co-ordinators will be final and binding upon any participant.**

Weapons Specification: Robots can have any kind of magnetic weapons, cutters, flippers, saws, lifting devices, spinning hammers etc. as weapons **with following Exceptions -**

- Any kind of inflammable weapon.
- Explosives of any kind (solid or liquid or gaseous).
- Spinning weapons which come in contact with arena floor. In no case should the arena be damaged. If any robot is found to do so, the responsible team will be disqualified.
- Nets, tape, glue, or any other entanglement devices.
- Liquid projectiles (especially inflammable liquids of any kind). High power magnets or electromagnets.
- Radio jamming, Lasers, tesla coils, or any other high-voltage device.





ARENA Specifications:

1. The arena is closed on all four sides for safety purposes. It will have openings (doors) in the opposite edges for putting the bot inside.
2. Outer dimensions of the arena will be 12 ft x 12 ft while inner dimensions would be 10 ft x 10 ft.
3. The arena will be made of mild steel on the surface and surrounded by polycarbonate sheets of 2mm thickness around it.

EVENT STRUCTURE:

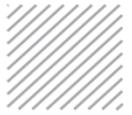
- The event is conducted in knock out rounds in which two robots will take each other in a bout.
- There will be 1 round of 3-4 minutes (depending on the number of enrolled teams). Timeouts will be given in between if needed.
- Maximum of 3 timeouts is allowed during which teams can relocate their bots. However participants are not allowed to make any changes in the bot.
- If after completion of all the rounds, no bot is able to demolish the other bot, winner will be selected after evaluating the damage incurred to both the bots.
- Any change in the rules by the Judge, that shall be intimated to the teams in the event arena.
- The event will consist of one-on-one matches between the teams. The highest number of points accumulated by a team across all the three rounds will be declared the winner and will move to the next qualifying round whereas the losing team will be eliminated.

JUDGING CRITERIA:

The points will be given on the basis of aggression, damage, control & strategy.

Aggression – Aggression is judged by the frequency, severity, boldness and effectiveness of attacks deliberately initiated by the robot against its opponent. If a robot appears to have accidentally attacked an opponent, that act will not be considered Aggression.





Control – Control means a robot is able to attack an opponent at its weakest point, use its weapons in the most effective way, and minimize the damage caused by the opponent or its weapons.

Damage – Through deliberate action, a robot either directly or indirectly reduces the functionality, effectiveness or defensibility of an opponent. Damage is not considered relevant if a robot inadvertently harms itself. Also, if a pressure vessel or a rapidly spinning device on a robot fragments, any damage to the opponent will not be considered "deliberate".

Strategy – The robot exhibits a combat plan that exploits the robot's strengths against the weaknesses of its opponent. Strategy is also defined as a robot exhibiting a deliberate defence plan that guards its weaknesses against the strengths of the opponent.

Abstract Submission Rule:

Mail your abstract containing the video of the working bot to **ureckon.uemk@gmail.com** with subject as **ROBO DANGAL** and the body containing your Team Name and member details latest by **8th FEBRUARY 2020**.

For Further Details Contact:

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