

# TECHNICAL RULE BOOK

---

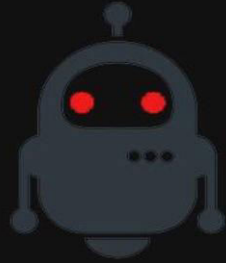
**BY**

**DHANESH : 9039551426**

**DIGVIJAY : 8871264896**

---

# ROBOTICS EVENTS



**ROBOWARS**  
Let The Battle Begin

## **INTRODUCTION**

The battle for honor and dominance is back and this time it would be even furious. Warrior would rise and crush to ground but only one will stand tall.

**ROBOWAR** is characterized by extreme aggression, damage and usually immobility. Brace yourself for ultimate fight for honor and witness the most horrific battle of robots.

## **SPECIFICATIONS**

### **Team:**

1. Any team can participate in Robowars, **SAMVID**. A team may consist of a maximum of 6 participants. These participants can be from same or different institutes.
2. Team Name: Every team must have a name which must unique.

3. Team Representative: Every team must specify their Team Representative(Leader) at the time of registration . All the important communication between SAMVID and registered teams will be done through their Team Representative. The Team Representative must submit valid contact details(phone no., email ID etc.) at the time of registration.

4. Team Id: A team Id would be provided to each team and will be used as a mean for carrying out communication for all purposes.

### **Robot:**

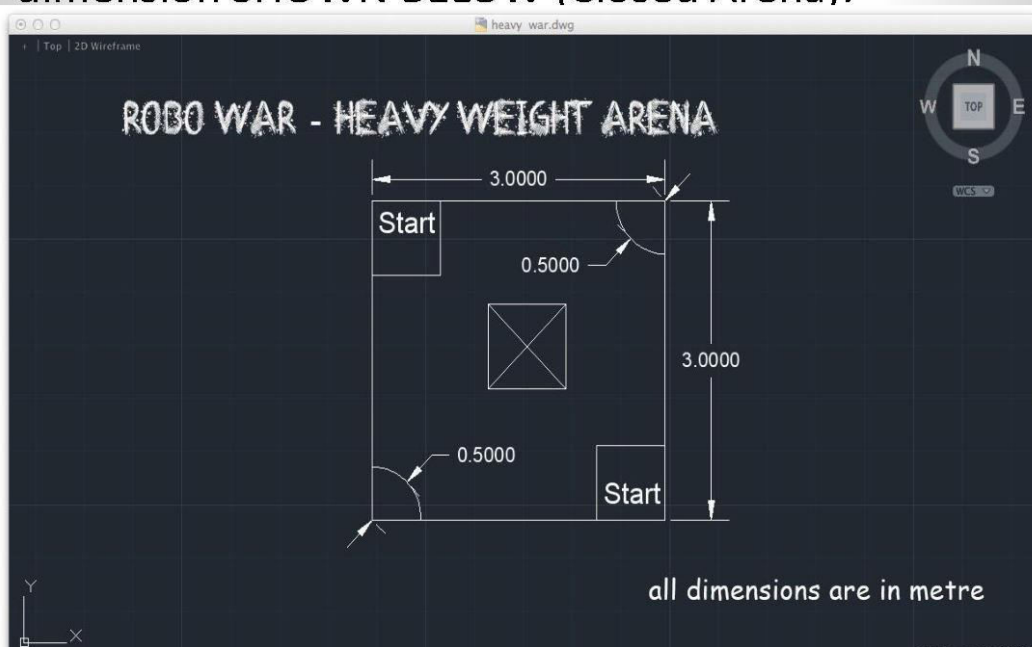
5. The Robots should not exceed the dimension of 750mm\*750mm\*1000mm (l\*b\*h). External device which are used to control the robot are not included in size.

6. Weight of robot should not exceed 40kg(5% tolerance), including the weapons.

· If you have a robot or weapon design that does not fit within the set categories of rules or is in borderline, please contact event manager.

7. Robot can be controlled by both wireless and wire technique.
8. If robot is controlled through wired mechanism then wire must remain stack under all circumstances throughout the competition. Wire must be of 6meters(minimum) in length.
9. If robot is controlled through wireless mechanism then it must have a dual frequency remote control circuit.
10. Remote control system available in market can be used.

**ARENA** : Arena will be of square shape with dimension SHOWN BELOW (Closed Arena).





# **RULES & REGULATIONS**

## **GENERAL RULES:**

- A robot is declared victorious if his opponent is immobilized.
- Duration of each round will be of 1 minutes. Total number of rounds will be 3 in a match.
- Only 2 minutes time-out will be given for 3 times in whole match. Time-out can be taken in any round.
- A competitor will be declared as immobile if it cannot display linear motion of 1 inch in time period of 10 seconds.
- In case both the robots remain mobile after the end of the round then the winner will be decided subjectively.
- Pinning or ramming is allow. Organizers will allow pinning or lifting for a maximum of 20 seconds per pin/lift then the attacker robot will be instructed to release the opponent.

- Points will be given on the basis of aggression and damage.
- Aggression – Aggression is judged by the frequency, severity, boldness and effectiveness of attacks deliberately initiated by the by the robot against its opponent.
- Damage – Through deliberate action, a robot either directly or indirectly reduces the functionality, effectiveness or defensibility of an opponent.
- Decision of organizers will be final and binding on all.

## **Robot Control Requirements**

- Both wired and wireless remote controls are allowed in the event
- All wires coming out of the robot should be bundled as a single unit
- The wires should be properly protected and insulated.
- The wire should be sufficiently long so as to remain slack at all time during the competition.
- In case of wireless remote controls, the remote should have at least two frequency operations to prevent interference with other team

# **Mobility**

- Methods of mobility may include:
- Rolling (wheels, tracks or the whole robot).
- Walking (linear actuated legs with no rolling or cam operated motion).
- Shuffling (rotational cam operated legs)
- Jumping and hopping is not allowed.
- Flying (using aero foil, helium balloons, ornithopters, etc.) is not allowed.
- Any other method of mobility which leads the robot to lose contact with the ground is not allowed.

# **Battery and Power**

- The machine can be powered electrically only. Use of an IC engine in any form is not allowed.
- Batteries must be sealed, immobilized electrolyte types.
- The voltage should not exceed more than 36V
- All connections should be made safe to prevent short circuits and battery fires. Any unsafe circuitry maybe asked to be replaced



- Change of battery will not be allowed during the match unless timeout is taken by either of the team.
- 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.

## **Pneumatics**

- Robot can use pressurized inflammable gases to activate pneumatic device.
- Maximum allowed pressured is 8 bars.
- Participants must be able to indicate the used pressure with integrated or temporarily fitted pressure gauge.

## **Weapon Systems**

- Robots can have any kind of spinners, flippers, saw, lifting devices etc. as weapon with following limitations:
- Any kind of flammable liquids.
- Flame based Weapons

# **GAMEPLAY**

## **ROUND 1:**

- This will be a knock-out round.
- 2 teams will be competing against each other at a time and based upon the point scored, team will be eligible for next round.

## **ROUND 2:**

- In this round, again a knock out match will be played.
- Team will be qualified for next round on the basis of following criterion:
- If opponent becomes immobile during the match.
- If both the robots remain mobile during whole match then winner will be decided on the basis of point scored.
- Number of qualifying team will be declared on the spot.

# SAFETY RULES

- All the participants must build and operate robots at their own risk. Combat robotics is inherently dangerous. Please take care not to hurt yourself or others when building, testing and competing.

If you are using wired mechanism, then the member holding wire must wear helmet.

All effort must be made to protect battery terminals from a direct short and causing fire in a battery.

## REGISTRATION FEES

Rs. 1000/- per team

RE-REGISTRATION  
FEES:

(For Round-1 only)  
Rs. 600/- per team

**Event In charge:**

Aviral Nimbekar:9752830305

Ayush Kashyap : 9399751528

**Event Managers:**