It's the rule of every battlefield-"Kill or get killed!"

AARUUSH'15 presents a unique RoboWars experience where slam, thrash or kick your opponent out of the arena. Because there is no ground for mercy in a war! Bring on your robots to fight recklessly and emerge as the only SUPERBOT!

Event Format:

- A team can consist of maximum of 5 members.
- Team members can be from the same institution or different institutions.

ROUND 1

The registered Teams will have to submit a Team Description Paper (TDP) by email. This will be a screening process for advancement into further rounds.

ROUND 2

All the selected bots in the will be paired up against another bot. They will be scored based on their performance and points will be allotted to them.

Round 3

Top bots will advance to the next round based on the points they obtained on the previous Round. This will be continued till the last bot stands in the arena.

RULES

1. The change of weapon or body panel should be done before each round and must be retained throughout the round.
2. During finals, any on-board equipment that could require attention between duels for maintenance - e.g. recharging of compressed gas cylinders, charging batteries, resetting of weapons, etc. - should be easily and quickly accessible i.e. systems

must be installed in such a manner that they can be removed for filling and testing within five minutes.

3. Rolling (wheels, tracks or the whole robot) motion is allowed.
4. The machine should fit in a box of dimension 750x750x1000 mm at the starting of the match.
5. Jumping, hopping and Flying (using airfoil, helium balloons, etc.) is not allowed.
6. A team can take a maximum of three resets.
7. The machine should not exceed 70kg including the weight of pneumatic source/tank. In case of a wireless robot the weight is considered 0.8 times the original weight.
8. Weight of adaptors, battery and the remote control will not be counted.
9. Any machine component should not be detached (intentionally) during any point of the war.
10. Readymade gear boxes, control circuits and remote control can be used.
11. In case of wireless system, it should have a minimum four frequency remote control circuit or two dual control circuits or a transmitter receiver paired module so that the frequency interferences with opponent team can be avoided (in case of any interference in the wireless systems, they will not be considered for rematch or in the results).
12. Remote control systems from toys might be used. Remote control systems available in the market may also be used.
13. In case of wired bots, the wires should remain slack at any instant during the fight. All the wires coming out of the machine should be stacked as a single unit. Also, the wires should be projected 500mm above the ground to avoid entanglement.
14. Nonstandard or self-made remote control systems must first be approved by the organizers.
15. The machine can be powered electrically only. Use of an IC engine in any form is not allowed.
16. Power supply can be on board or outside the arena.
17. Batteries must be sealed, immobilized electrolyte types (such as gel cells, lithium ion, lithium polymer, NiCad, NiMH, or dry cells).
18. The electrical voltage at any point of time in the machine should not exceed 36V DC.
19. 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.
20. Use of damaged, non-leak proof batteries may lead to disqualification.
21. Change of battery will not be allowed during the match (exemption can be made in case of battery damage).

22. 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. If teams don't show up on allotted slot, they will be disqualified.
23. Any damage caused to arena on purpose will lead to negative points or even disqualification.

Pneumatics and Hydraulics:

1. Participants can use pneumatic and hydraulic weapon systems but use of external pressure/ liquid cylinders are not allowed. Reservoirs should be placed on the bots.

2. The outlet pressure of the source/tank should not exceed 6 bars.

3. Robots can use pressurized, non-inflammable gases/liquid to initialize their pneumatic mechanisms.

4. The used pressure should be indicated by means of temporarily fitted pressure gauge or there should be a provision to measure the cylinder pressure on the bot.

5. The storage tank and pressure regulators used by teams need to be certified and teams using pneumatics are required to produce the Safety and Security letters at the Registration Desk at the venue. Failing to do so will lead to direct disqualification.

6. You must have a safe way of refilling the system and determining the on board pressure.

7. All pneumatic components on board a robot must be securely mounted. Particular attention must be made to pressure vessel mounting and armor to ensure that if ruptured it will not escape the robot. The terms 'pressure vessel, bottle, and source tank' are used interchangeably.

Weapon Systems:

Robots can have any kind of cutters, flippers, saws, lifting devices, spinning hammers etc. as weapons with following exceptions and limitations:

1. Liquid projectiles.

2. Any kind of inflammable liquid.

3. Flame-based weapons.

4. Any kind of explosive or intentionally ignited solid or potentially ignitable solid.

5. Nets, tape, glue, or any other entanglement device.

6. High power magnets or electromagnets.

7. Radio jamming, lasers, tesla coils, or any other high-voltage device.

8. Tethered or un-tethered projectiles.

9. Chemical based Weapons

10. Ultrasonic based Weapons

Spinning weapons which do not come in contact with the arena at any point of time are allowed. In no case should the arena be damaged by any bot.

Safety:

1. Compliance with all event rules is mandatory. It is expected that competitors stay within the rules and procedures of their own accord and do not require constant policing.

2. The machine would be checked for its safety before the competition and the team would be disqualified if their machine is found unsafe.

3. Participants are expected to abide by the rules & should co-operate with the organizers.

4. If you have a robot or weapon design that does not fit within the categories set forth in these rules or is in some way ambiguous or borderline, please contact the event organizers. Safe innovation is always encouraged, but surprising the event staff with your brilliant exploitation of a loophole may cause your robot to be disqualified before it even competes.

5. All participants build and operate robots at their own risk. Combat robotics is inherently dangerous. There is no amount of regulation that can encompass all the dangers involved. Please take care to not hurt yourself or others when building, testing and competing.

Judging criteria:

1. A robot is declared victorious if its opponent is immobilized.

2. A robot will be declared immobile if it cannot display motion in a timed period of 30 seconds. A bot with one side of its drive train disabled will not be counted out if it can demonstrate some degree of controlled movement. In case both the robots remain mobile after the end of the round then the winner will be decided subjectively.

3. A robot that is deemed unsafe by the judges after the match has begun will be disqualified. The match will be immediately halted and the opponent will be awarded a win.

4. If a robot is thrown out of the arena the match will stop immediately, and the robot still inside the arena will automatically be declared as the winner.

5. Robots cannot win by pinning or lifting their opponents. 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. If, after being instructed to do so, the attacker is able to release but does not, their robot may be disqualified. If the robots become entangled or a crushing or gripping weapon is employed and becomes trapped within another robot, then the competitors should make the timekeeper aware, the fight should be stopped and the robots separated by the safest means.

6. Points will be given on the basis of aggression, damage, control and 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:

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 defense plan that guards its weaknesses against the strengths of the opponent.

Bonus:

1) Maximum time limit for every match is 10minutes, the winning bots will be awarded bonus points depending on the time they take to immobilize the opponent which will be equal to the number of seconds remaining. The bot which finishes first will have an upper hand in case of tie-break.

2) Bonus points will be awarded to the bots which performs the following tasks:

a) Pushing opponent's bot against the wall - 20 pts

b) Flipping opponent's bot using flipper mechanism in the arena – 20 pts

NOTE: Qualification of a robot to next level is subjective and totally on the decision of the judges. The robot winning in a round against its opponent doesn't guarantee its entrance into the next round. If the judges found the winner robot incompetent to enter into the next round, it may get disqualified. Judges can disqualify both the robots of a match from advancing to the next round. All the decisions taken by the judge will be final and binding to all. Any queries afterwards will not be entertained.

Arena specifications:

Arena dimensions:

Arena will be of hexagonal shape. The distance between diameters of hexagon will be 10ft*10ft and is 6ft high lined by concrete block and surrounded by a steel cage. The flooring will be plywood.

Arena weapons:

Weapons such as Saws, flippers, wedges, heavy weight bobs may be present which can be used by the players against their opponents for maximum 5 times.