



**3<sup>RD</sup>-5<sup>TH</sup> APRIL**

*This April, experience high adrenaline levels as fierce monstrous robots battle it out for supremacy. Expect intense competition as teams fight it out in the hell-cell and unleash their fury. Killer bots, violent opponents, harsh sound of blades and a pile of junk metal. Blades ruthlessly cutting out the nuts and bolts of their opponents giving you a sight of dreadful wars. The worst nightmare of yours is going to come true. Hold out baits to entice the enemy. Feign disorder, and crush him. Definitely not for the weak hearted!!*

*So, get ready to enter into the world of robot domination and become a part of Blitzkrieg Apocalypse, EDGE 2015.*

## TEAM SPECIFICATIONS AND ELIGIBILITY

**ELIGIBILITY:** Students of any recognized engineering college are eligible to participate.

**TEAM SPECIFICATION:** Any team can participate in Blitzkrieg, EDGE. A team may consist of a maximum of 6 participants. These participants can be from same or different institutes.

## BOT SPECIFICATIONS

### DIMENSIONS AND FABRICATIONS:

- The machine should fit in a box of dimensions 40cm x 40cm x 40cm (l x b x h) at any given point during the match (with a tolerance of 10%). The external device used to control the machine or any External tank is not included in the size constraint.
- The machine should not exceed 35 kg in weight including the weight of pneumatic source/tank.



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## POWER SOURCES

- The machine can be powered electrically only. Use of an IC engine in any form is not allowed.
- Each team must prepare its own power sources. Only 220V volt AC sources will be provided at the arena, but can only be used in the form of DC voltage. The teams have to bring their own battery eliminators.
- The voltage difference between any two points in the machine should not be more than 24V DC at any point of time. However the team can use separate power source for locomotion and weapon system.
- There is no limit on amperage value of the power source.
- All connections should be made safe to prevent short circuits and battery fires. Any unsafe circuitry may be asked to be replaced; failure to do so will result in disqualification.
- Use of damaged, non-leak proof batteries may lead to disqualification.
- Change of battery will not be allowed during the match.



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## MOBILITY

- All robots must have clearly visible and controlled mobility mechanism in order to compete.
- Jumping and hopping is not allowed.
- Flying (using aerofoil, 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.

## 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.
- Teams are recommended to attach a pipe to bot in vertical direction through which wires come out. The length of pipe will not be considered in bot dimension.

## WEAPON SYSTEMS

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

- Any kind of inflammable liquid / liquid projectiles.
- Smoke or dust based weapons
- Flame-based weapons.
- Any kind of explosive or intentionally ignited solid or potentially ignitable solid.
- Nets, tape, glue, or any other entanglement device.
- High power magnets or electromagnets.
- Radio Jamming, Tasers, Tesla coils, or any other high-voltage device.
- Tethered or un-tethered projectiles.



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- Spinning weapons which do not come in contact with the arena at any point of time are allowed.

## **PNEUMATICS AND HYDRAULICS**

- The robot must use non-inflammable and non-corrosive fluids to power pneumatic and hydraulic devices.
- Maximum pressure in the tank containing pneumatic fluid should not exceed the limit of 10 bars and there should be a provision to check the pressure in the tank.
- All hydraulic liquids are required to be non-corrosive and your device should be leak proof. The maximum pressure in cylinder should not exceed the rated pressure at any point of time.
- Participants must be able to indicate the used pressure with integrated or temporarily fitted pressure gauge.
- You must have a safe way of refilling the system
- All pneumatic components on board a robot must be securely mounted. Care must be taken while mounting the pressure vessel and armour to ensure that if ruptured it will not escape the robot.

## **SCORING**

- Points will be awarded, once in a round, if the bot reaches opponent's starting point, which can be referred to as safe zone.
- Points of the opponent team will be deducted if their bot is pushed into the danger zone (Remaining corners of the arena apart from safe zone).
- Points will be awarded for pushing the opponent's bot out of the arena. In no case should the arena be damaged by any bot. The competition will be played on a knock-out basis.
- Specific scoring rules will be updated on the website at a later stage.



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## GENERAL RULES

- There will be three rounds, four minutes each.
- Any team that is not ready at the time specified will be disqualified.
- The name of your machine must be prominently displayed on the machine.
- In no case should the arena be damaged by any bot. The competition will be played on a knock-out basis.
- A BOT will be declared 'KNOCKED-OUT' if it is unable to travel a distance of 6 inches in 30 seconds.
- If no bot is immobilized then winner will be declared on the basis of the points scored.
- The organizers reserve the rights to change any or all of the above rules as they deem fit. Change in rules, if any will be highlighted on the website and notified to the registered teams.
- Violation of any of the above rules will lead to disqualification.
- Decision of organizers will be final and binding on all.

## SAFETY RULES

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.

- Special care should be taken to protect the on-board batteries and pneumatics, robot without proper protection will not be allowed to compete.
- 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 organizers with your brilliant exploitation of a loophole may cause your robot to be disqualified before it even competes.
- Each event has safety inspections. It is at their sole discretion that your robot is allowed to compete. As a builder you are obligated to disclose all operating principles and potential dangers to the inspection staff.



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- Proper activation and deactivation of robots is critical. Robots must only be activated in the arena, testing areas, or with expressed consent of the event coordinators.
- All weapons must have a safety cover on any sharp edges.
- 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. Any kind of activity (repairing, battery handling, pneumatics systems etc.) which may cause damage to the surroundings during the stay of the teams in the competition area should not be carried out without the consent of organizers. Not following this rule may result in disqualification.
- All the resources provided at the time of competition from the organizers should be strictly used only after the consent of the organizers.
- Once the robots have entered into the arena, no team member can enter into the arena at any point of time. In case if a fight has to be halted in between and some changes have to be done in the arena or condition on the robot(s), it will be done by organizers only.