TECH-FEST

MAC-ING

MACHINE DESIGNING USING AUTOCADE

❖ Rules and Regulation regarding this Event are follows: -

1. There must be one or two members in each group.
2. Entry fees is Rs 80 per group.
3. There will 2 or 3 round on the basis of number of participants.
4. All participants have to make their drawing in limited time in each round.
5. In beginning round participants have to make 2D drawing and in final round they have to make isometric drawing.
6. A Drawing will be given to the participants and participants have to draw in AUTOCAD.
7. The Drawing should be made with proper dimensioning.
8. Any discrepancy leads to disqualification of the candidate.
9. For final round there only 10 group will be select out of number of participants.
10. Venue of the events are C-LAB (13 And 14)
11. Judgement will be done considering the technical details.

Student Co-ordinator

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BOT-ING

Robot Making

RULES:

1. Each team must have four members. Students from different departments or institute can foam a team.

2. Team should bring their own extra batteries to avoid inconvenience.

3. The organizer is not responsible for any type of sort or damage.

4. each candidate carry their ID cards

5. Entry fees is rupees 120.

6. Only one attempt is allowed per team.

7. Participants shall bring their own material to make a robot for the problem statement given

8. There will be total 3 rounds.

Requirements:

1 Arduino Uno and USB cable

2 Three ultrasonic sensors

3 L298 Motor Driver

4 2*DC Motors

5 2*9V Batteries

6 Battery caps

7 Connecting wires

8 Chasis, Wheels, ball caster

9 Stationary tools

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ROBO-YUDH

Robowar

❖ Rules and Regulation regarding this Event are follows: -

- **Dimensions and Fabrications:**

1. The machine should fit in a box of dimension 500mm x 500mm x 700 mm (l x b x h) at any given point during the match. The external device used to control the machine or any external tank is not included in the size constraint.

2. The machine should not exceed 5* kg and should be more than 2* kg of weight including the weight of pneumatic source/tank. All pneumatic tanks/source and batteries should be on board. Weight of remote controller will not be counted.

Mobility: All robots must have easily visible and controlled mobility in order to compete. Methods of mobility include:

1. Rolling (wheels, tracks or the whole robot).

2. Jumping and hopping is not allowed.

3. Flying (using airfoil, helium balloons, ornithopters, etc.) is not allowed.

- **Robot Control Requirements:**

1. The machine can be controlled through wireless remote only. Power supply should be on board only. Refer below for further details on battery and power.

2. The team must have at least four frequency wireless remote control circuit or two dual control circuits which may be interchanged before the start of the race to avoid frequency interference with other teams. The case of any interference in the wireless systems will not be considered for rematch or results.

3. Remote control systems from toys might be used. Remote control systems available in the market may also be used.

4. Nonstandard or self-made remote control systems must first be approved by the organizers.

- ## Battery and Power:

1. The machine can be powered electrically only. Use of an IC engine in any form is not allowed. On board batteries must be sealed, immobilized-electrolyte types (such as gel cells, lithium, NiCad, NiMH, or dry cells).

2. 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.

3. Use of damaged, non-leak proof batteries may lead to disqualification.

4. Special care should be taken to protect the on-board batteries. If judges found that the battery is not properly protected, then team will be disqualified immediately.

6. Change of battery will not be allowed during the match.

7. Only bots with on board batteries are allowed. 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.

- ## Pneumatics:

1. Robot can use pressurized non-inflammable gases to actuate pneumatic devices. Maximum allowed outlet nozzle pressure is 12 bar. 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.

2. Participants must be able to indicate the used pressure with integrated or temporarily fitted pressure gauge. Also there should be provision to check the cylinder pressure on the bot.

3. The maximum pressure in cylinder should not exceed the rated pressure at any point of time.

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

5. 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. The terms 'pressure vessel, bottle, and source tank' are used interchangeably.

6. Entire pneumatic setup should be on board, no external input (from outside the arena) can be given to the robot for functioning of its pneumatic system.

- ## Hydraulics:

1. Robot can use non-inflammable liquid to actuate hydraulic devices e.g. cylinders.

2. All hydraulic components on-board must be securely mounted. Special care must be taken while mounting pump, accumulator and armour to ensure that if ruptured direct fluid streams will not escape the robot.

3. All hydraulic liquids are required to be non-corrosive and your device should be leak proof.

4. Maximum allowed pressure is 12 bars.

5. Participant must be able to indicate the used pressure with integrated or temporarily fitted pressure gauge.

6. Entire hydraulic setup should be on board, no external input (from outside the arena) can be given to the robot for functioning of its hydraulic system.

Weapons Systems: Robots can have any kind of magnetic weapons, cutters, flippers, saws, lifting devices, spinning hammers etc. as weapons with following exceptions and limitations: (cutters and saws shuld be used carefully)

1. Liquid projectiles.

2. Any kind of inflammable liquid.

3. Flame-based weapons.

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.

1. Special care should be taken to protect the on-board batteries and pneumatics, robot without proper protection will not be allowed to compete.

2. 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.

3. 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.

4. 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.

5. All weapons must have a safety cover on any sharp edges.

6. 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.

7. All the resources provided at the time of competition from the organizers should be strictly used only after the consent of the organizers.

8. 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

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