R-ATV!



Description

"R-ATV a competition of speed, fineness and precision competitors will navigate their all-terrain vehicles through a track engineered with sharp turns, slippery straights, bumpy surface and specially designed hurdles to slow them down. "

Problem Statement

Participants must build a wireless RC controlled robot capable of navigating a track consisting of various hurdles like high bumps, low friction surfaces, banked corners, and other dynamic hurdles

Objective

Design and build a manually controlled, battery-powered rover that must navigate through obstacles in the arena and complete the race ahead of competing rovers. The robot must operate wirelessly, as wired control is strictly prohibited.

Event Description

Climb or crawl. Scale or tumble. Dominate or be defeated.

R-ATV is an adrenaline-pumping all-terrain vehicle competition where participants showcase their own made remote-controlled ATVs. This event pushes the limits of engineering and driving skills, challenging builders to create the ultimate off-road machine. Demonstrate your vehicle's prowess by navigating rugged landscapes and outmaneuvering your rivals!

Contestants will race their ATVs through a demanding course filled with obstacles, from rocky terrains and inclinations to muddy pits. Prepare for unexpected challenges and dynamic twists that will test your ATV's endurance and maneuverability.

The 'Terrains of Triumph' await!

Team Specifications

1. A team can include up to five participants.
2. All team members must be enrolled from the same college.
3. Each team needs to designate a team leader during the registration process.
4. All important communications will be directed through the team leader.

Bot Specifications

1. The robot must totally fit into a 300mm(length) x250mm(width) x250mm(height) cuboid i.e the robot should strictly be smaller than a cuboid of the given dimensions, and 5% tolerance will be accepted
2. Ground clearance should be in range of 60mm-100mm.
3. Maximum weight of the ATV should not exceed more than 5kg with a tolerance of 5%
4. Participants are allowed to use only an on-board power supply. Teams shall bring their own power supply for all their machines. Supply for charging the devices would be provided.

Track Specifications

1. The track is 45 cm wide and includes bumps, low friction areas, banked sections, sharp turns, high bumps, and other obstacles.
2. It features inclines, declines, and a variety of racing surfaces.
3. The track has straight paths, sharp turns, rotating discs, and bumpy sections.
4. The finish line is marked by a 5 cm x 40 cm black and white checkered zone

Gameplay

1. The competition is based on a time trail system.
2. If any of the robots starts before the start up call, the counter would be restarted and the machines will get a second chance. If repeated again then the team will be disqualified.
3. If the Robot crosses a checkpoint, and moves off track, then the Robot would be placed back on the previous checkpoint crossed with a penalty.
4. If the robot by any chances falls from the bridge, the robot will be kept back to the previous checkpoint crossed with a penalty.
5. Team members will be allowed only five times to touch or reset their robots position during the run.
6. This will lead to a time penalty and the timer will not stop during this course of action.

Tie-breaker Criteria

1. Number of human interventions.
2. Number of penalties
3. Time taken to complete the track.

General RULES

● All the participant should have to bring their identity card of their respective institutes in the competition.

● The robots should not contain any corrosive, harmful, or combustible substances due to safety concerns.

The robot should not damage the track. Any Unethical behaviour of team could lead to disqualification.

● Only the time measured by organizers will be final and considered for scoring. Time measured by the participants by any means will not be accepted in any case.

● During the event, the organizers shall not be responsible for any damage caused to the robot.

● In case of any disputes or discrepancies, the decision of the organizers or judges shall be treated as final and binding on all.

● Any rule is subject to change during the event such as the length of the game increasing or decreasing the number of objects, etc.