LFR FOLLOW-ME

A line following vehicle is an entry level autonomous vehicle that can navigate any course while following a on a contrasting background. An autonomous vehicle is a driverless car that can drive itself from one point to another without any external assistance. Navigation is accomplished by a system of sensors that drive the corresponding actuators on the vehicles.

Objective -
Build an autonomous, line-following robot which traverses a given track in the least possible time. The "track" is simply a line which the robot has to follow from the start to the finishing point.

Details -
All the students enrolled in high school, undergraduate, postgraduate (excluding PhD.) program at any recognized institute are eligible to participate. Each team can consist of maximum 4 members. Each team must declare a name for their machine at the time of competition. All participants must carry valid ID cards of their respective schools/colleges. There will be two rounds. Teams completing Round One will be eligible to participate in Round Two.

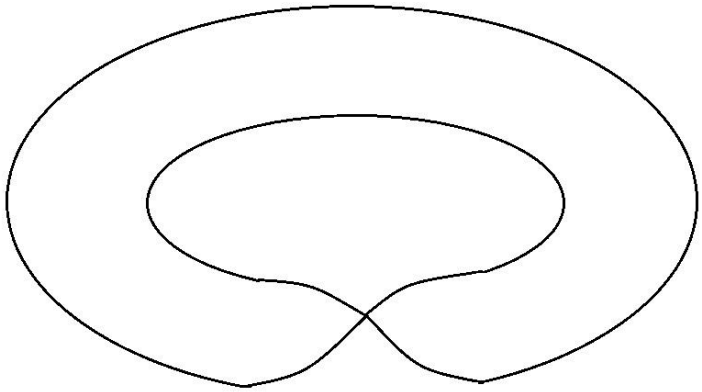
Arena Specification -

Arena size shall not be more than 3m x 2m. Arena will consist of 3cm thick track. The track will have black line on white background, white line on black background, alternative white and black lines, three way junctions, intersections, loops and dead end, acute turns and U-turns, curves. The track can be discontinuous. There will be different arenas for different rounds. Arenas will be unveiled only on the day of competition. Sample arenas will be put up on the website. Teams will be given sufficient time to calibrate their bot for arena before start of the event.

Rules and Instructions -

- The LFR (with batteries and sensors) must be able to fit in a cube of side 25cm at all times during the course of competition.
- The maximum permissible weight of LFR is 5kg (all inclusive).
- LFR has to be powered on its own. Maximum operating voltage of robot should not exceed 12V. No wiring or external power supply will be provided.
- Replacement of battery during the competition is allowed for a maximum of 2 times. Points may be deducted for this. However, replacement of any hardware is not allowed during the competition.
- LFR can be restarted maximum 4 times during the competition. If it is still not able to reach the end point, LFR will be disqualified.
- Judgment shall be made upon the total time taken to complete the track by LFR and upon the number of checkpoints completed successfully. In case, all the competing LFRs fail to complete the track in given limit of time, distance covered by each of them will be evaluated.
- If any team member touches the Robot, in any case except for the restart, team will be disqualified.
- For every restart, penalty of 5 seconds will be applied. Points will be deducted in this case.
- In case of restart, the LFR will have to start from the latest checkpoint that was completed successfully i.e. LFR doesn't need to begin from the start square.
- Each team will comprise of Maximum 4 students. Only the captain of the team will be allowed to touch the LFR, only in case of restart.
- Qualifying teams from the First round will participate in Second or final round.
- 10 minute practice sessions may be available on sample tracks before the competition begins.
- Online registration is compulsory.

Sample Track -



NOTE: This is only a sample track & will not be chosen for competition.

INCEPTUM team wishes you all the best...!!!

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