

Navigators of the Nebulae

Overview - This is a robotic competition where teams design and program autonomous bots to follow a track. The goal for each bot is to follow the line accurately and quickly from start to finish with covering all the checkpoints. Participants will compete against each other to see who can design the most accurate and efficient bot. The bot will work autonomously without any human intervention.

Team Info:

A team can consist of a maximum of 4 members. Each team must declare a name for their team.

Participation Criteria - Classes 6th - 12th.

Note - You have to bring your own tools/materials no tools will be provided and keep an extension with you for charging the batteries.

Problem Statement - Design and build an autonomous vehicle that can quickly and accurately follow black lines on a white floor. The vehicle will be tested on how fast it can complete the course and accuracy of the path following.

Robot Specifications:

The robot must be able to fit inside a 25cm(length) x 20cm(width) x 15cm(height) box and it should weigh less than 2 kgs.

Any wired/wireless control is not allowed.

There should be no human intervention at any cost if so then the team might be disqualified.

The bot should have an onboard power supply which should be less than 12 volts.

The bot should not damage the arena by any means.

Rounds Overview:-

The team which completes the track with the fastest time and all the checkpoints covered without any deviation will be given preference.

Teams will compete and top teams will be selected for the next round.

The judgment will be on the basis overall time and checkpoints covered.

Game Rules:

The robot must start from the starting line and follow the designated track to the finish line. Teams will have 1 minute to set up before their run begins.

If the robot deviates from the track, team members can reposition it at the last checkpoint and restart (Note: The timer will continue running).

This can only be done two times per run.

The timer stops as soon as the robot crosses the finish line. If a technical issue arises, teams may declare a "technical fault" to fix the robot (Note: This can be done once per run, and the timer will not pause).

Arena:

There will be two arenas, one for practice and another will be the final track. The arena will consist of a black line on a white floor. And the width of the black line will be 2 cm. The track will have smooth curves, right angle sharp turns and junctions (there will be no turns less than 90°). The entire arena will be conveniently situated in a uniformly lit room to minimize ambient light. If you want, you will be given access to change the light in the room.

Disqualification:

The robot must not be purchased and should not be made from any ready-made kit, if found so, the team will be disqualified.

It is expected by all teams to play a clean and fair game.

Misbehaving teams and participants will be asked to leave the competition area and risk being disqualified from the contest.

The call by the judges will be last and final no changes will be done if a team does not agree with the decision of the judge it will be removed from the contest.

Judgement Criteria:-

Time covered will be the main criteria of judgement in both the rounds.

There will be checkpoints at most turns of the arena and by covering those checkpoints the marks will be allotted. If the bot deviates from the

track it will be kept at the last checkpoint it covered before the completion of the track.