

INTRA COLLEGE TECHFEST

KICK-O-BOT

“Behind every kick of the ball there has to be a thought.” -Dennis Bergkamp

Playing football with your feet is one thing, playing football with your heart is another, but playing football with your bot is extraordinary. Show your better is better than anyone else's better.

Event Category:

Manual Robotics

Problem Statement:

Design a manually controlled robot capable of playing soccer and scoring maximum number of goals against other robots avoiding different obstacles which come in their way and moving blocks to their destined positions.

General Rules:

- A team may have a maximum of 4 members.
- The members must bring IDENTITY CARDS of the college.
- No person should be a member of two teams.
- The participants will be provided with 220 Volts, 50 Hz standard AC supply.
- Participants will have to themselves arrange for any other power supply required for their robot.
- Teams cannot tinker with their bots during the play offs.
- LEGO kits or its spare parts or pre-made mechanical parts are not allowed.
- Any kind of damage to the arena by the robot will lead to direct disqualification.
- No attack on the opponent bot is allowed.
- Any act of misbehaviour or misconduct will lead to immediate disqualification of the team.

- The decision of the coordinators will be final and binding.

****The rules are subject to change.**

Robot Specifications:

- The robot should have a maximum size of 25cm (l)*25cm (b)*25cm (h) with a tolerance of 10%.
- The maximum allowable weight of the robot is 2.5 KG without any tolerance.
- The robot can be powered on-board or off-board.
- The potential difference between any two electrical points on the robot must not exceed 20 volts throughout the run.
- External weights on bot are not allowed.
- The robot should not grab/hold the ball at any point of time during the match.

Event rules:

➤ First Round:-

- The game will be of maximum of 3 minutes.
- The bot has to score maximum number of goals in a given time.
- Scoring goals from a specially designed position will be considered as jackpot.
- A maximum of 10 seconds will be allowed to hold the ball.
- The bot will also have to place some blocks in the arena to their defined positions horizontally as well as diagonally.
- While moving the robots have to avoid obstacles placed at different positions in arena.
- Two timeouts of 2 minutes each will be provided in case of any mechanical fault in the bot with negative points awarded for the second timeout.
- The teams with highest score will be selected for further rounds.

Scoring:

SCORE = 100 + 50*[Number of goals scored] +100*[Number of Jackpot goals] +20*[Number of blocks placed horizontally] +40*[Number of Blocks placed diagonally] -10*[Number of obstacles touched] - 20*[Number of obstacles touched] - 20*[Number of wrong block placement] -100*[Second timeout taken]

➤ **Qualifiers:-**

- The game will be of maximum of 3 minutes.
- This round will be a one-on-one round.
- The bot will have to place certain blocks at their defined positions in the arena of their opponent.
- During placement of the blocks, a bot cannot intentionally collide or block the opponent bot in its task.
- After placing all the blocks, the bot can approach for the QUEEN BLOCK during which collision and defence is allowed.
- While moving the robots have to avoid obstacles placed at different positions in arena.
- The team completing the total task first and having more points wins the match.
- 1 timeout of 2 minutes will be provided in case of any mechanical fault in the bot with negative points awarded.

Scoring:

SCORE = 100 + 50*[Number of blocks placed] +100*[Queen Block] - 10*[Number of obstacles touched] -20*[Number of obstacles touched] - 100*[Timeout taken]

➤ **Semi Finals:-**

- This will be a knockout round.
- The game will be of maximum of 3 minutes in two halves of 1.5 minutes each.
- The bot has to score maximum number of goals against their opponents in given time.
- A maximum of 10 seconds will be allowed to hold the ball.
- In case of tie, the match may go to extra time or penalty shootout.
- The winner team will be selected for further rounds.

Scoring:

Whoever scores the maximum number of goals, wins the match.

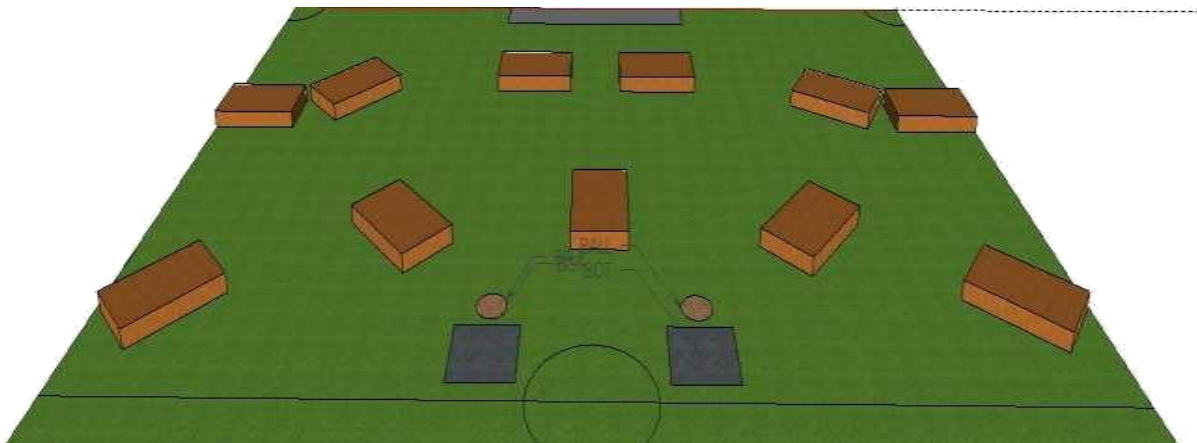
➤ The Final Blow:-

- The rules will be same as that of semi-finals.

Scoring:

Whoever scores the maximum number of goals, wins the competition.

Arena Specifications:



- The dimension of the arena will be (10x8) square feet with side walls of height 5 cm.
- A ball of diameter 3 cm (approx.) will be used.
- Blocks of 7cm (approx.) will be used.
- The length of the goal post will be 30 cm (approx.).
- All arena specifications are supposed to be measured with a tolerance of 10%.
- The obstacles in the arena are flexible and can be changed accordingly.

****The arena description is subject to change in different rounds.**

EVENT COORDINATORS:

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