



**BITFEST**  
2019

# Line Follower Robot

## *Eligibility:*

1. Any college student or undergraduate student from any university of Bangladesh is eligible to participate in this contest.
2. Participants will have to take part in a team.
3. Each team will be recognized by its name and its leader name.

## *Team Specifications:*

1. Teams having 4 or less members will have to pay a registration fee of BDT 2000.
2. A maximum of 5 members are allowed with a BDT 500 fee for the extra member.
3. Each team will have a team name and a team leader.
4. The authority will only contact with the team leader.

## *Rules:*

1. Before the competition each team has to submit their robot to the authority.
2. The authority will check the robot for any violation of the rules specified below. if any violation found, the team will be disqualified.
3. Maximum 2 members will be allowed in the arena and they can contact the authority for clarification.
4. There will be 3 rounds. In each round, the teams will be given 2 minutes to calibrate their robots before the start of the run.
5. The robot must go through every checkpoint in order.
6. Only 5 attempts/restarts are allowed in the total track.
7. The team will be allowed to restart only from the latest checkpoint which was passed in order.
8. In case any physical damage to the wall by the robot, the robot will have to restart from the last checkpoint visited in order.
9. In case the robot is touched by the participant after the race has started, the race has to be restarted from the last checkpoint visited in order.

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10. If the robot is stopped before completing current checkpoint, the run has to be restarted from the last checkpoint visited in order.
11. In case of failure to complete first checkpoint, the robot will have to restart from the start point. This will count as a restart for the team.
12. Check point completion: The full robot body will have to cross the checkpoint in order to count the checkpoint as visited.
13. Judges decision will be final in all situations. The judges have the authority to alter any rules stated in this rulebook based on any situation.
14. The measurement of time will be in seconds.

## ***Robot Specification:***

1. The robot can have a maximum height of 25cm.
2. The robot can have a maximum width of 25cm.
3. The robot can have a maximum length of 25cm.
4. The robot can have a maximum weight of 5kg.
5. The robot must not contain any communication module. The finding of such module will result in disqualification of the team.
6. The robot must contain no more than 2 switches and must have one kill switch.
7. The robot be ground wheeled and have rubberized wheel.
8. The robot cannot contain any camera.
9. No restrictions on chassis.
10. Each team has to bring own power supply for their robot. No additional equipment / parts will be supplied.
11. Robots must be able to operate under any lighting conditions. (You should be prepared for lighting situations like sunlight, camera flashes or fluorescent lights etc.)

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## *Arena specifications:*

1. The track will black on white surface.
2. The breadth of the track will be 3cm.
3. Maximum dotted lines will have spacing of 5cm.
4. Arena will contain a bridge and wall.
5. First round arena will not contain any bridge or wall.
6. Second round will contain a bridge.
7. Third round will contain bridge and wall.
8. Minimum angle will be 30 degrees.

## *Bridge Specification:*

1. The bridge will have no walls and no roof.
2. The bridge will have a maximum width of 30cm.
3. The bridge will have a black line on it.
4. The bridge will have a maximum angle of 30 degrees.
5. The bridge will have maximum height of 15cm.

## *Wall Specification:*

1. The wall will have a maximum height of 30cm.

Follow the third-round description for more details.

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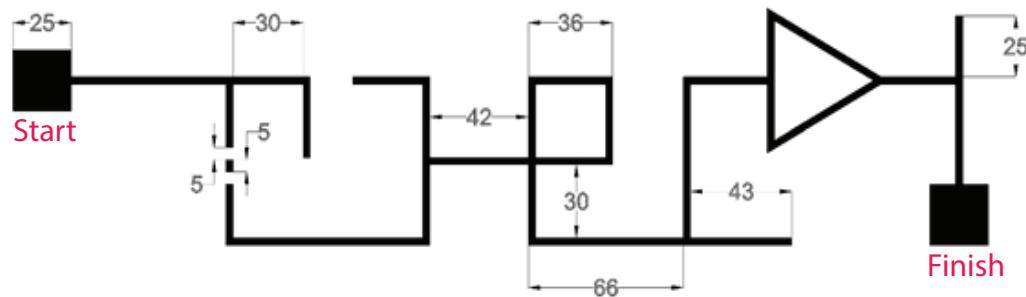


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## *Round Description*

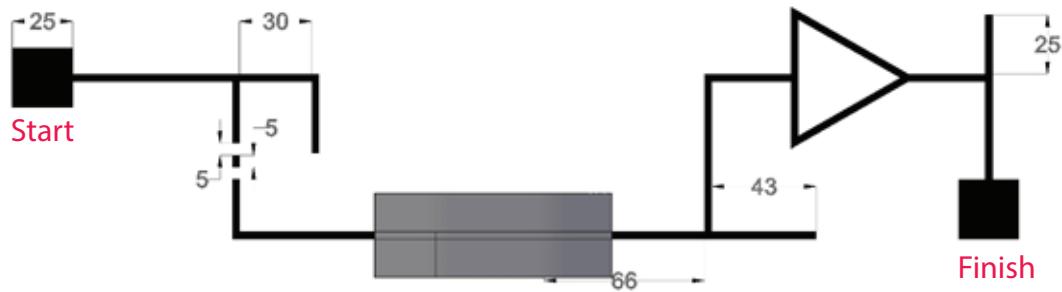
### *Round 1:*



1. All measurements are given in cm.
2. The participant will be given 2 minutes to calibrate. Calibration is optional.
3. Each participant will be given 5 minutes to complete the track.
4. Each participant can restart from the last checkpoint visited in order at most 5 times in this round.
5. In order to pass the round, each team has to complete the track. Top 10 teams will pass on to the next level. In case 10 teams cannot complete the track, scoring system will be followed to pick the top.

### *Round 2:*

### *Top View*

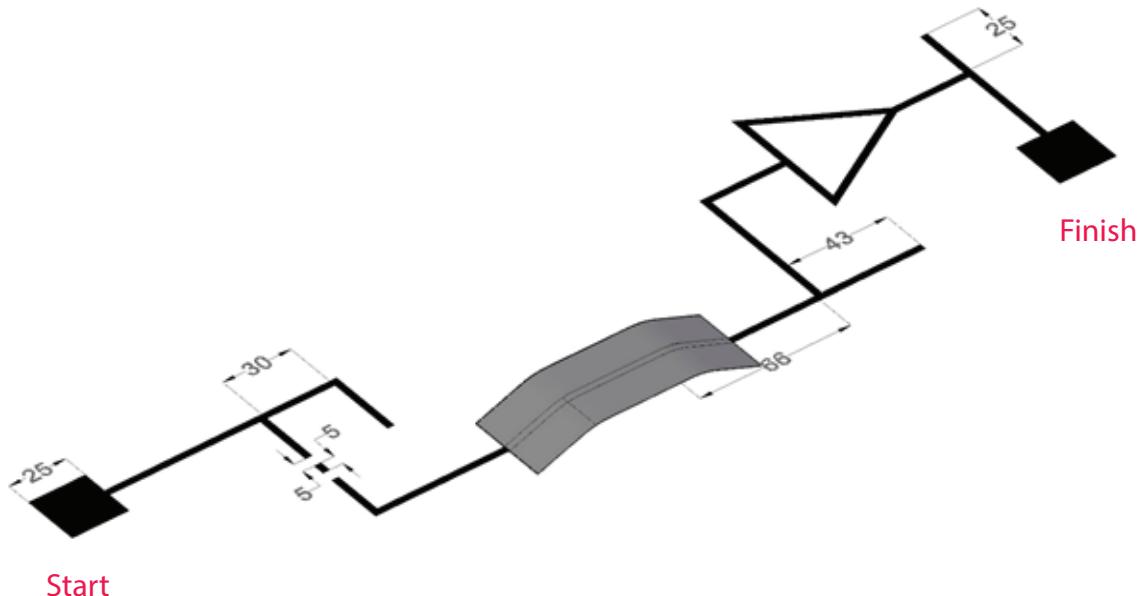




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## Isometric View



1. All measurements are given in cm.
2. The participant will be given 2 minutes to calibrate. Calibration is optional.
3. Each participant will be given 5 minutes to complete the track.
4. Each participant can restart from the last checkpoint visited in order at most 5 times in this round.
5. For more details follow Bridge Specification

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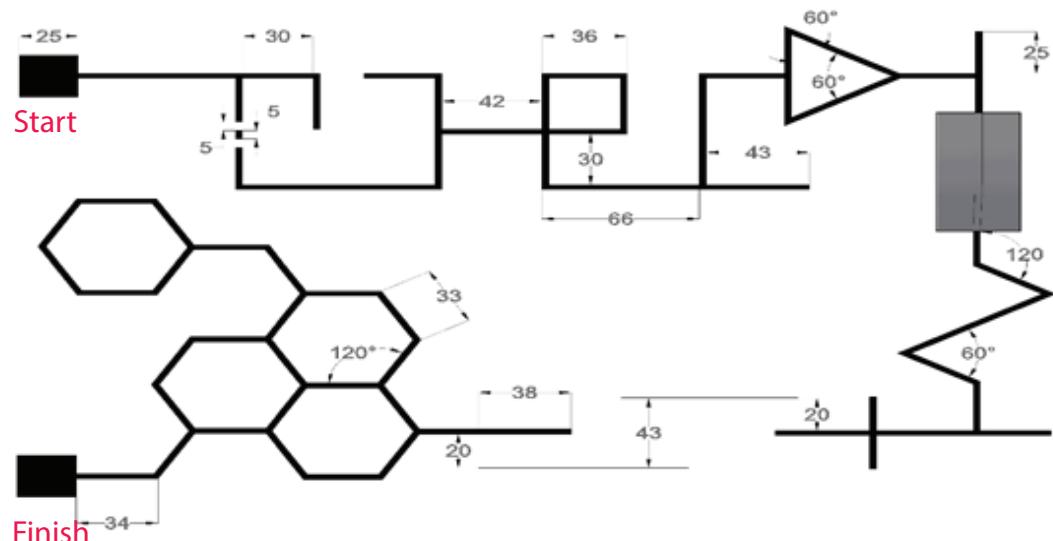




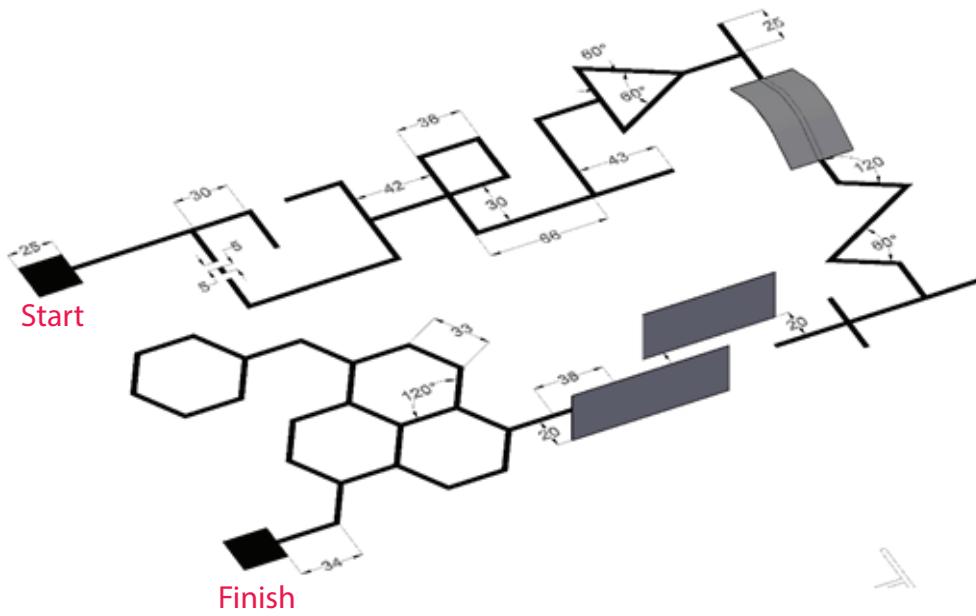
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## Round 3: Top View



## Isometric View





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1. All measurements are given in cm.
2. The participant will be given 2 minutes to calibrate. Calibration is optional.
3. Each participant will be given 10 minutes to complete the track.
4. Each participant can restart from the last checkpoint visited in order at most 5 times in this round.
5. For more details follow Bridge Specification and Wall Specification.

## ***Ranking Criteria:***

The ranking system will be based on the following criteria given according to priority

1. If a robot reaches the endpoint
  - a. Less number of restarts taken
  - b. Less amount of time taken
2. If a robot doesn't reach the endpoint
  - a. More number of checkpoints complete
  - b. Less number of restarts taken
  - c. less amount of time taken before stopping on the track

## ***Stopping Criteria:***

1. If the total number of restarts finished
2. If the contestant says "Stop" Loudly
3. If the time limit reached

## ***Drive Link for the tracks:***

<https://drive.google.com/open?id=1-os2oQ603cf3UDA3U1bUYgdYA0Wi8WLZ>

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