



# LINE FOLLOWER COMPETITION

## Overview

A small autonomous Robot has to follow a line under various conditions (e.g. round corners, sharp corners, crossovers, bridges). Points are awarded on the basis of distance covered, speed and various conditions. There will be three rounds. Qualifying round, Second Round, and Final Round.

## Eligibility

This competition is open for all colleges and undergraduate students of all the universities of Bangladesh. Participants have to take part in a team and each team will have a team leader and a team name. Each team will be recognized by its registered team name and registered team leader. A team may consist of maximum four members. Students from different educational institutes can form a team. The team leader will be a member of the team as well.

## Team specification

Teams will consists of maximum 4 members. There will be a team leader who will be a member of the team as well. Team may be formed with members from the same university or different universities but team members must be undergraduate or college students.

## Robot Specification

1. Maximum Length: 25cm
2. Maximum Width: 25cm
3. Maximum Height: 25cm
4. Maximum weight: 5kg
5. Robot must be a ground wheeled vehicle.
6. Readymade bots are not allowed.
7. Readymade circuit boards are allowed.
8. A bot should have a kill switch and should not have more than 2 switches.
9. Any kind of communication module is **RESTRICTED** and if it is found that any bot have communication module in it, the team will be disqualified.
10. No construction set such as LEGO or Meccano is allowed.
11. Maximum 24 volts DC on board power supply. The potential difference between any two points should not exceed 24 volts.
12. Metal wheeled robot are not acceptable, they must use rubberized wheel.
13. Each team has to bring its own power supply for Robot. No additional equipment/parts will be supplied.
14. Robots must be able to operate under any lighting conditions. (You should take necessary measures to isolate the sensors from external lighting like sunlight, camera flash etc.)

## Arena specification

1. Total arena dimension 14 feet by 10 feet.
2. Track will be Black on White surface.
3. Minimum breadth of the track line will be 2.5cm and maximum of 3cm.
4. Minimum distances between two parallel lines will be 14cm.
5. Minimum Angle will be 30°.
6. Maximum dotted line distance will be 3cm.
7. Arena will contains a Bridge with no line and a Wall.
8. Qualifying round arena will not contain no bridge and wall. Second round arena will contain wall. And Final round arena will contain bridge.
9. There will be no line on the bridge.
10. There will be a black roof over the bridge in the final round.
11. Maximum height of the wall will be 30cm.
12. Maximum angle of the bridge will be 20°.
13. The breadth of the bridge will be 30cm. The breadth of the roof will be 15cm.

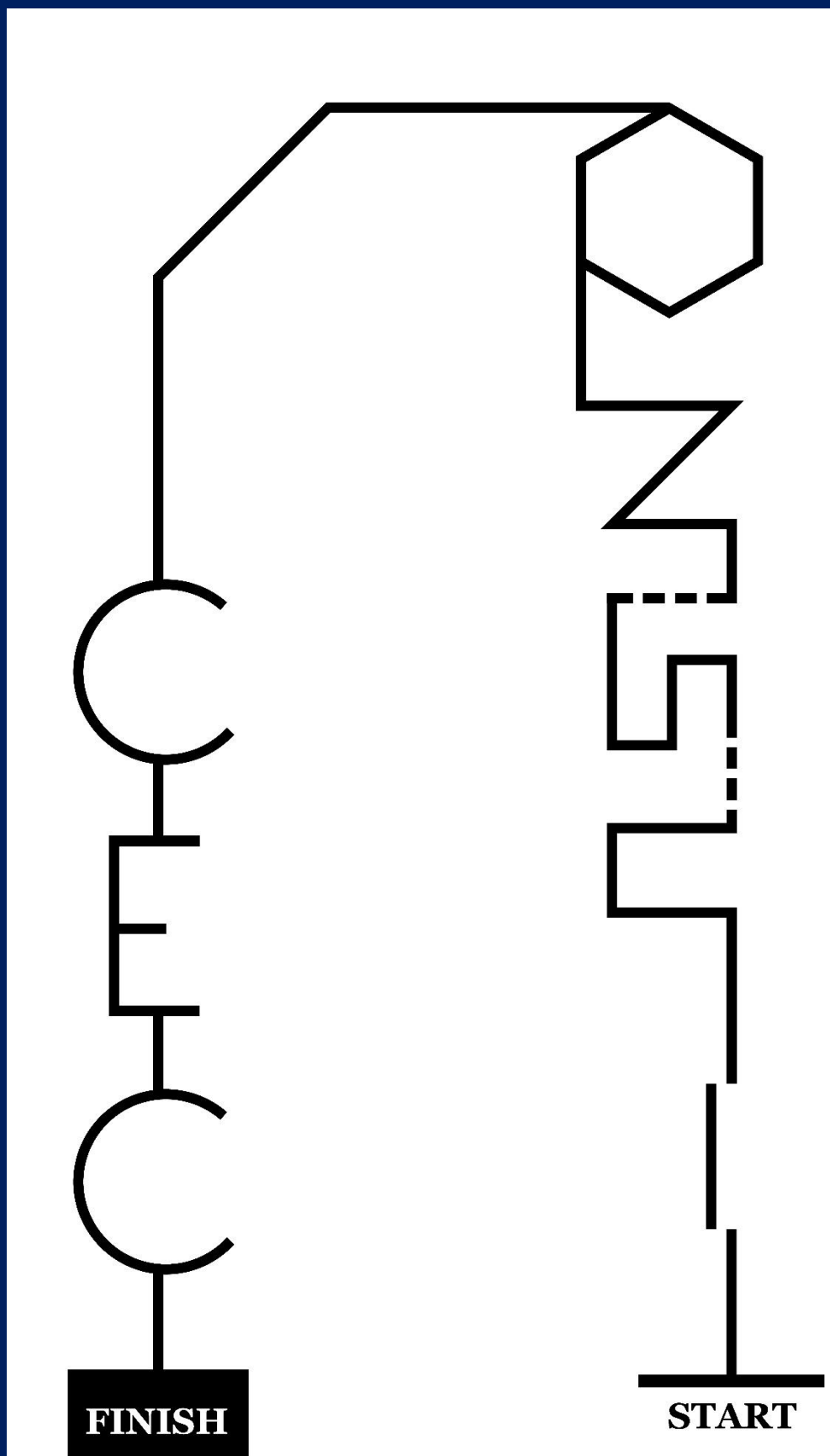
## General Rules

1. Before the competition starts each team has to submit their Robot.
2. After submitting the Robots it will not be allowed to make any kind of change of the Robot.
3. Only team leader is authorized to present the robot and contact for any claim and specifications.
4. **Judges decisions will be final.** So, no objections shall be declared against the judge's decisions.
5. Robot must follow the line fully autonomous without any human intervention.
6. Robot must go through every checkpoint. Otherwise Robot will be disqualified.
7. Only 5 attempts/restarts are authorized.
8. One team member can be within the arena for restart the robot or getting the robot in line.
9. Race time will be six minutes for Qualification Round, five minutes for Second Round and four minutes for Final Round. But this can be changed according to the circumstances.

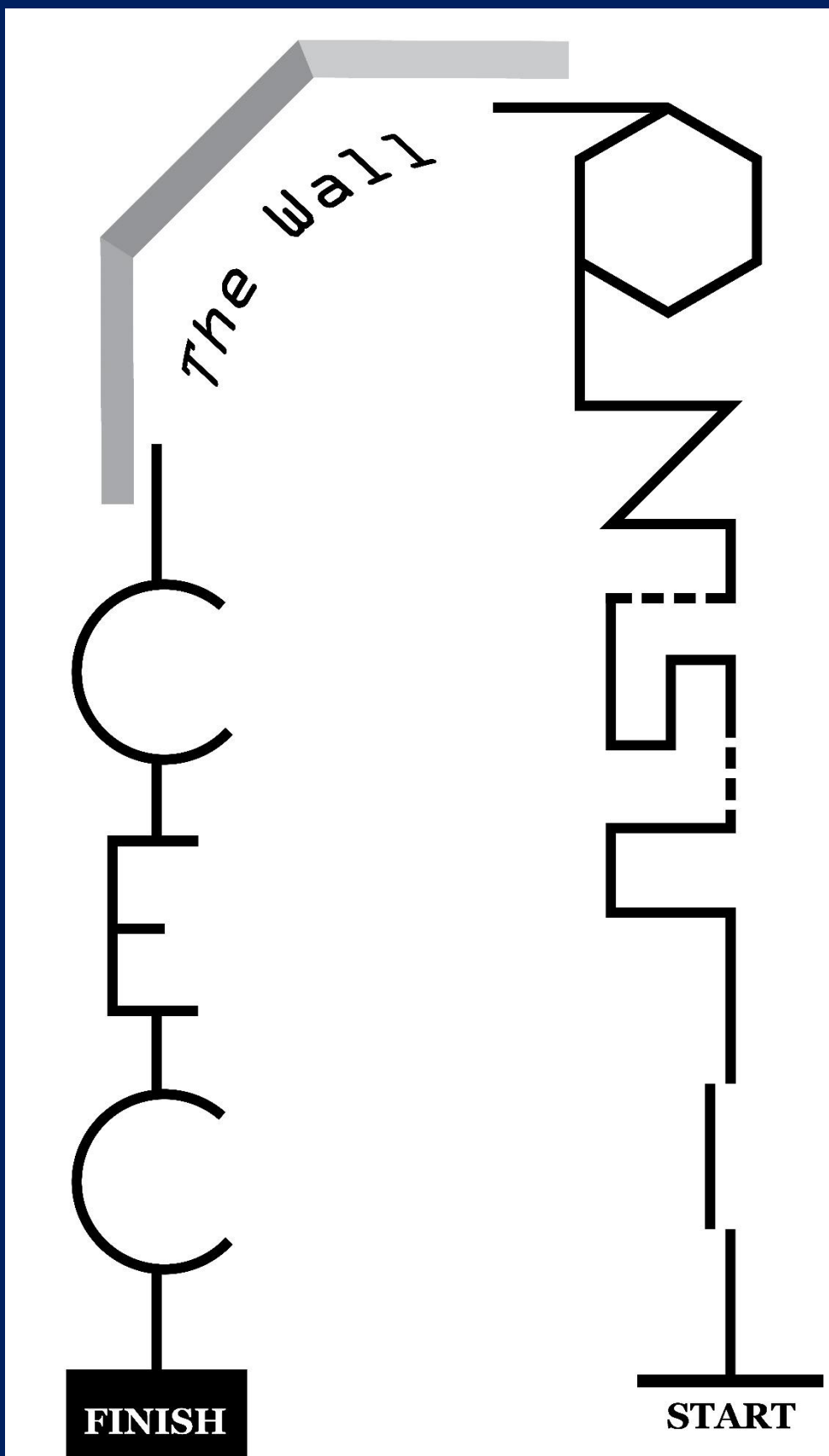
## Special Cases

- Modification or abolition of the rules can be made by competition committee as long as they are published prior to the event and are consistently maintained throughout the event.
- Participating teams are always responsible for the safety of their robots and liable for any accidents caused by their team members or their robots.
- As long as the concept and fundamentals of the rules are observed, these rules shall be flexible enough to encompass the changes in the number of players and of the contents of matches

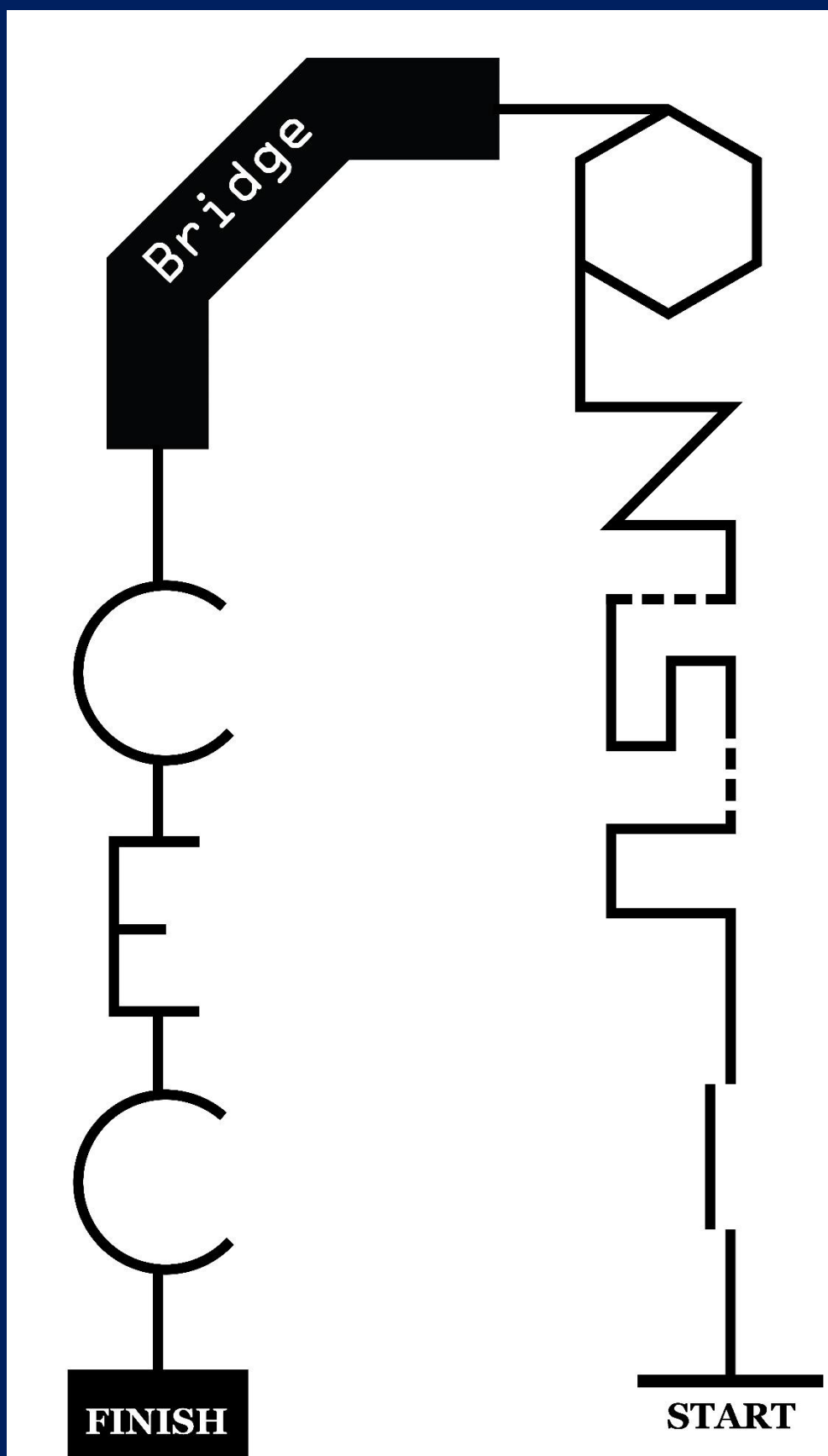
# Qualifying Round Arena



## Second Round Arena



# Final Round Arena



# Scoring

Activity	Points(QR)	Points(SR)	Points(FR)
Run Time = T minutes	$(6-T)*10$	$(5-T)*10$	$(4-T)*10$
Arriving the Finish Point	30	40	50
Passing each checkpoint	20	30	40
Lose The line	Restart from last checkpoint	Restart from last checkpoint	Restart from last checkpoint
Each Restart	-30	-30	-30
Stop in the finishing point	+50	+50	+50

The organizer reserves the right to change any of the above to ensure an enjoyable competition!

*Prepared by: NSUCEC R&D*