

Robo-Soccer

Participation and Eligibility

- All respective candidates must be enrolled in any recognized university/institute of Pakistan irrespective of their discipline.
- Team members from different discipline/institutes are allowed.
- Volunteers or organizers are not allowed to enter this competition under any circumstances.
- Replacement of any participant of a team is not allowed after registration.

Registration Procedure

All interested students must go through the following steps in order to register for the Robo-Soccer in SENTEC 2016:

- Fill in the online registration forms from SENTEC website with your given details while making sure no required fields are left blank.
<http://goo.gl/forms/HxRkeYM1o598prsU2>
- After submitting your required fees and completion of the registration process, you will be notified of your registration via text and email.
- For complete registration, visit SENTEC office i.e. inside Telecom Engineering Department, NEDUET, Karachi or Registration desk in front of SFC, NEDUET Karachi.
- Registration charges are PKR 1200 per team.
- Each team shall consist of maximum five participants.
- The registration fee is non-refundable.
- Failure in timely payment of the registration fees will result in the immediate cancellation of the registration.

General Rules and Regulations

- On the day of competition, all participants should bring their university cards as well as the registration slips.
- Discipline during the competition should be followed at all times. Acts of disturbance or violence of any matter will result in disqualification from the competition.
- Authority has the right to change any rule without prior notice.
- The participant shall not be allowed to use mobile or other electronic items during competition.

Specific Rules

1:Game Procedure:

- 1.1 There will be two rounds. The time duration for 1 round will be **3 minutes**.
- 1.2 The break of **5 minutes** is in between the 2 rounds.
- 1.3 A Get Set announcement will be there before 3 minutes from the match.
- 1.4 Teams failing to complete the setup within the setup time, cannot continue the setup during the match time and will have to put the robot in arena in the present condition.
- 1.5 Each team is required to have two robots for the match. Robots will play a football match under the rules entailed in this rule book.
- 1.6 Team scoring most goals will be declared **SOCCER LORD**.
- 1.7 Teams are allowed to manually set a strategy relating to tasks like kick off, free kick, penalty kick etc.
- 1.8 In case the robots of a particular team have malfunctioned during the match, the team has an opportunity to resolve the issues by availing the time out(s) available. **1 timeout** is given to each team.
 - 1.8.1 In case a team consumes all its timeout(s) then without removing robots from the field, the team can either wait for the game time to expire or they can call off the match declaring the opponent team as winner.
 - 1.8.2 If a team does not forfeit and decides to continue with the match then opponent team can score goals in the remaining game time.
 - 1.8.3 Time out(s) can only be availed after asking the permission from the Match Referee.
 - 1.8.4 Time out(s) cannot be taken while the ball is in play.
 - 1.8.5 Duration of a single time-out is **120 seconds**.

2:Game Tasks & Restrictions:

- 2.1 Maximum 8 members with 2 robots are allowed in a group.
- 2.2 The possession at kick-off will be decided by a coin toss. At the kick-off, the defending team has to stay in its own half and outside the center circle mentioned in the game field.
- 2.3 A robot of a particular team is not allowed to keep the possession of the ball for more than **15seconds**. Ball can be passed to the ally robot to avoid foul of over possession.
- 2.4 Snatching of ball from the opponent team is not allowed. Both teams are **advised** to maintain a one robot distance (25cm) from each other to avoid collision. Collision will call for a free kick to opposition team.
- 2.5 While a team is availing an awarded free kick, the opponent team's robot(s) must stay away from the striker by at least 25 cm.
- 2.6 Following subsection describes the procedure of availing a **free kick**
 - 2.6.1 Whenever the referee whistles for a foul, both the teams are required to stop their robots.
 - 2.6.2 The referee will place the ball in the field and will announce the awardee of the free kick before blowing the second whistle. In this time robots are not allowed to move.
- 2.7 At the second whistle of the referee, a 5 seconds timer will start; with-in this time teams are required to take their positions. Within these 5 sec, free kick awardee team is not allowed to kick the ball.
- 2.8 After these 5 sec and with the third whistle of the referee the free kick awardee team can take free kick within next 10 sec. If the robot

is unable to take the free kick within these 10 sec then the free kick award would be cancelled.

3: Winner Team:

- 3.1 Team scoring more number of goals is considered as winner.
 - 3.1.1 In case the number of goals is equal, winner will be decided through Penalty Kicks.
Penalty shootout will only be done in the Quarter Finals, Semi Finals and Final.
 - 3.1.2 Each team will take 5 penalty kick opportunities.
- 3.2 In case the opponent team does not appear in the arena with both Robots within a time of 1 minute after announcement call, the present team will be declared as winner.
- 3.3 In case the opponent team is disqualified by Judges, the other team is declared as the winner.

4: Game Arena Specifications:

- 4.1 The field consists of a Game area with the dimensions as mentioned in the figure below.

Arena = 15x7 ft
- 4.2 The field consists of an Army Green colored carpet attached on a wooden base.
- 4.3 The field is surrounded by a wooden fence having a height of 100mm. whereas the goal height will be 30 cm.

Arena Measurements:

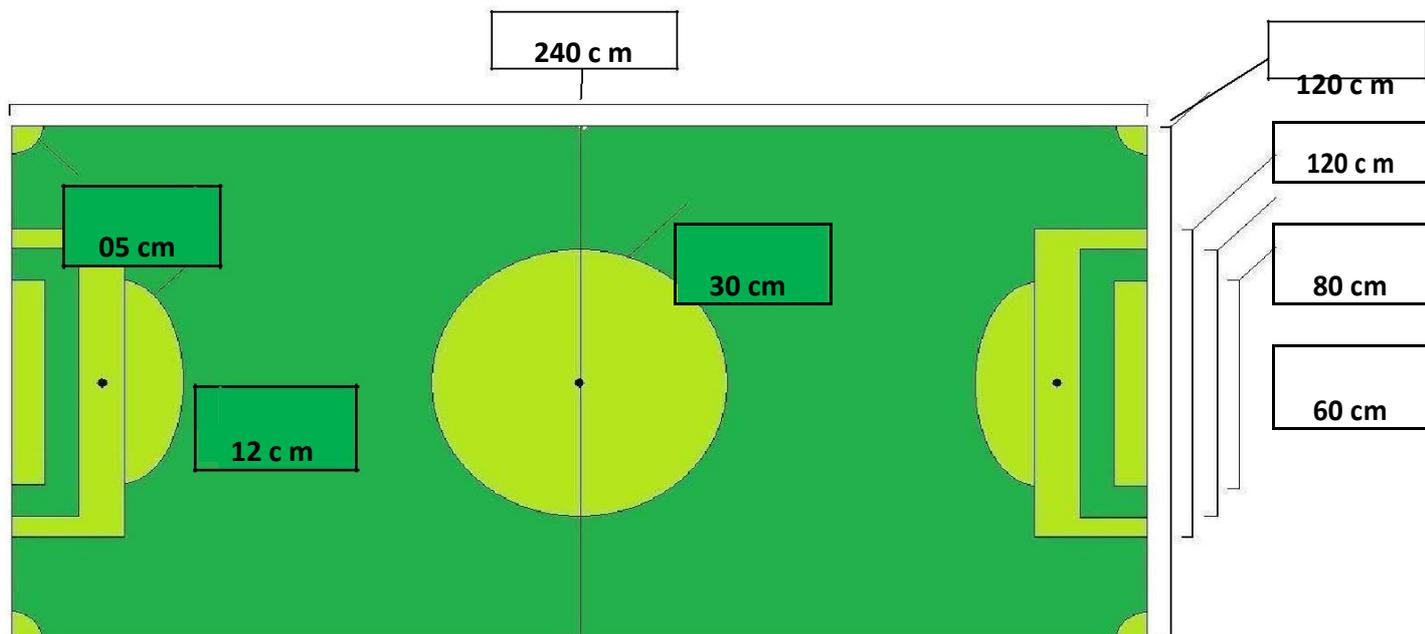


Figure 4.1: Size and measurements of Field

5: Game Tools Specifications:

5.1 A White colored golf ball with a standard radius of 21.3 mm and weight of 45.93gm is used as Football in the game.

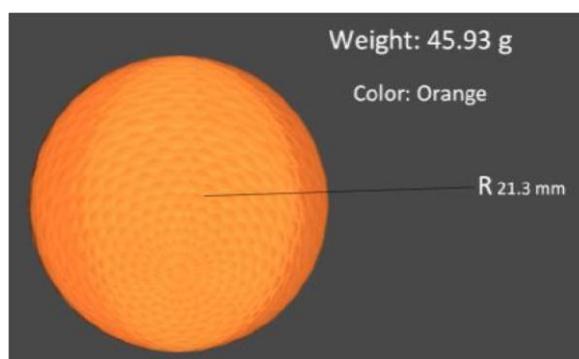


Figure 5.1: Ball size & Color

6: Robot Design Specifications:

6.1 Robots must fit in a Box of **28 x 28 x 28 cm³**.

6.1.1 All extensions must fit in the given dimensions i.e. a circle with a diameter of **28 cm**.

6.2 Height of each robot must not exceed **28 cm**.

6.3 The maximum weight limit is 13 kg for each robot.

6.4 While designing the robots team must keep in mind that possession of the ball may only be kept in the correct ways mentioned in the Figure.

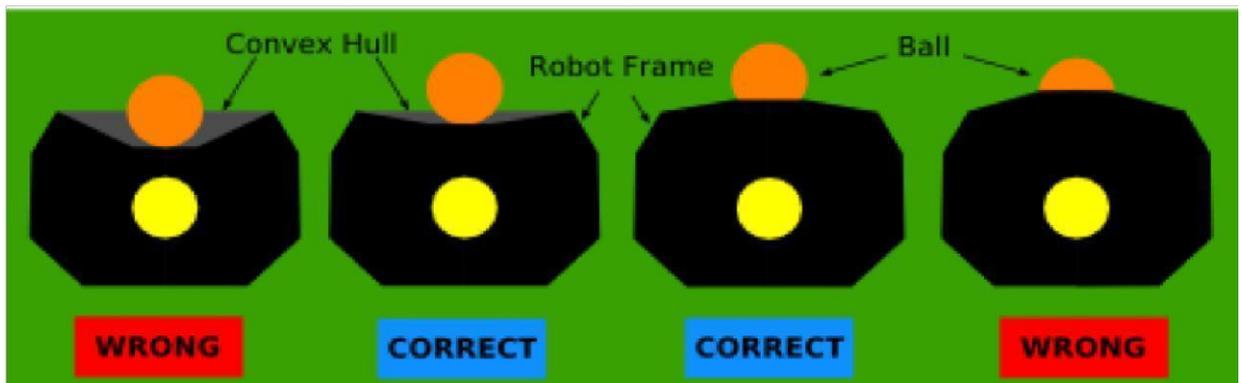


Figure 6.1: Correct Possession of ball.

6.5 As it is evident in the figure above that the robot frames must be designed in a way that while the ball is in possession, at least 75% of the ball must be visible.

6.6 Provision of supply through cords from mains to the robot is not allowed. **The operating voltages should not exceed 48V (except for the boost converter used for the kicker).**

7: Safety Guidelines:

7.1 Robots must be designed in a way that they must not in any aspect be harmful/dangerous.

7.2 Robots should not contain any sharp edges or incompletely machined parts to avoid any mishap during the contest. Minimum edges allowed will be 6.

- 7.3 Teams are encouraged to use motor drivers with over current protections and temperature sensors.
- 7.4 Robots should be properly wired and must be powered up by safe switches instead of just wire connections.
- 7.5 Robots should be properly wired and they must not in any aspect reflect dangerous insulation practice which may cause short circuit and other damages.
- 7.6 Teams using laser as sensor may only take class 2 or less as an option.

8: Violations:

- 8.1 **Robots should not collide with each other**, otherwise a violation will occur and the opponent team will be awarded a free kick if the team with possession was outside the D and a penalty kick if it was inside the D of the opponent team.
- 8.2 Pushing a robot of the opponent team is a violation and a free kick outside the D or a penalty kick inside the D is awarded to the opponent.
- 8.3 Intentionally targeting the opponent team with the ball is a violation and a free kick will be awarded to opponent.

9: Disqualifications:

The team is considered disqualified if it commits any of the following:

- 9.1 Team OR Robot may be disqualified at any time by Judges or Organizers without telling any reason. The decision of the judges is final.
- 9.2 The team performs any acts that are not in the spirit of fair play.
- 9.3 The team fails to obey instructions/warnings issued by match referee.
- 9.4 The team tries to damage arena, facilities, equipment or the opponent robots.
- 9.5 Over weight robot(s).
- 9.6 Team robot(s) are exceeding the mentioned dimensions.
- 9.7 The team does not meet the safety criteria mentioned in the section 7.



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