



Robot Soccer RC

League : Junior / Senior

Participant : team max 5 person

Level	Junior & Senior
Team	5 Partipant (maximum)/ Team and 2 robot / Team
Game	Tournament

1. DESCRIPTION

To improve teamwork and evaluate participants' ability to design robots with high stability and the ability to control robots to play soccer.

2. Robot Specification

- Maximum size(Lenght x Height x Width) = 20 x 20 x 20 cm
- Robots are prohibited to transform into another form after the match begins.
- Robots are not allowed to Stain or damage the arena
- Maximum voltage allowed is 12 V DC
- The weight and number of motors used are not limited
- Robots are not allowed to danger others at the match arena or around it.
- The use of a kit is prohibited.

3. Field

3.1. Kind of field

There is only one kind of field for all sub-leagues.

3.2. Dimensions of the field

The playing-field is 122 cm by 183 cm. The field is marked by a white line which is part of the playing-field. Around the playing-field, beyond the white line, is anouter area of 30 cm width. The floor near the exterior wall includes a wedge, which is an incline with a 10 cm base and 1 cm rise for allowing the ball to roll back into play when it leaves the playing field. Total dimensions of the field, including the outer area, are 182 cm by 243 cm.

3.3. Walls

Walls are placed all around the field, including behind the goals and the out-area. The height of the walls is 10 cm. The walls are painted matte black.

3.4. Goals

The field has two goals, centered on each of the shorter sides of the playing field. The goal inner space is 60cm width, 10 cm high and 74 mm deep, box shaped. It has a cross-bar on top (to prevent robots from entering the goal and to allow checking if the ball scored). The goal “posts” are positioned over the white line marking the limits of the field. The cross-bar is exactly over the white line. The interior walls and the cross-bar of each goal are painted, one goal yellow, the other goal blue. The exterior (including the goal post and frame) are painted black (see the field diagrams).

3.5. Floor

The floor consists of green carpet on top of a hard level surface. The carpet should be of a quality that will resist the wear and tear of spinning wheels. All straight lines on the field should be painted and have a width of 20 mm.

3.6. Neutral spots

There are five neutral spots defined in the field. One is in the center of the field. The other four are adjacent to each corner, located 45 cm along the long edge of the field, aligned with each goal post towards the middle of the field (from the goal post). The neutral spots can be drawn with a thin black marker. The neutral spots ought to be of circular shape measuring 1 cm in diameter.

3.7. Center circle

A center circle will be drawn on the field. It is 60 cm in diameter. It is a thin black marker line. It is there for Referees and Captains as guidance during kick-off.

3.8. Penalty areas

In front of each goal there is a 30 cm wide and 90 cm long penalty area. The penalty areas are marked by a black line of 20 mm width. The line is part of the area. A robot is considered inside the Penalty Area when it is completely inside.

3.9. Lighting and Magnetic Conditions

The fields should be placed in a way that the influence by external infrared light is as low as possible and that the magnetic field of the earth is disturbed as little as possible. Perfect conditions cannot be guaranteed, however. Teams must come to tournaments being prepared to calibrate their robots based on the lighting and magnetic conditions at the venue.

4. Ball

The diameter of the ball is ping pong ball.

5. Match Rules

- Each match will last 5 minutes.
- All matches will be based on elimination game. All teams will be paired with its opponent by the judges randomly.
- Each team is based on 2 robots /team.
- During the match, participants that are controlling their robot have to keep their distance , the match arena, and are not allowed to touch the arena.
- under certain conditions, the judge may offer a 30-second of time out for each team during the match.
- Robots must not held the ball for more than 5 seconds. If happens, the ball will be placed behind the robot.
- Robots are allowed to use all tactics as long as it is not a foul.
- Robots that commit a foul will be given a yellow card. When a robot has given 2 yellow cards, that robot will be taken out from the arena for 1 minute before going back into the arena.
- An extra time of 1 minute will be given if the match is tied.
- The penalty ball will be put on the Center point. The robot must do the kicking behind the white point for kicking and robots are not allowed to pass the white line while doing the kick.
- When the match is being held, whenever the judges blow the whistle, participants must stop their robot.

6. Winning Criteria

- Within 5 minutes, the team with the higher of score will be the winner
- Maximum amount of the extra time is 1 minute
- If the score is still tied upon the end of the extra time, each team will be given 3 penalty kicks.

- “Sudden death” penalty will occur when the score are still tied. The team will lose if they fail to score the penalty. The team will win if they succeed to score the penalty.

7. Disqualification

Teams will be disqualified if:

- Participants touch the robots
- Robots do not have the allowed specification

Field diagrams

