



Istanbul Technical University Robotics Olympics 2022

Stair Climbing Category Rules

Definition of the Task:

- In this category, robot tries to complete the track by climbing the stairs up and down.

Success Criteria:

- In this category, success criteria is to climb at least five steps.

Robot Specifications:

- 1) The robots must be (at the beginning of the competition) 35 cm in width, 40 cm in length and 40 cm in height in maximum.
- 2) There is no restrictions for the weight of the robots.
- 3) It is prohibited to use system that can damage the track, robots that damages the track will be disqualified.

Competition:

- 4) Every robot competes on its own turn.
- 5) Each robot has 2 chances and 4 minutes of time in each chance to compete.
- 6) Starting point of robots is at the behind of the white mark.
- 7) Robots climb the stairs up until they reach top of track, then they climb down one by one.
- 8) For a step to be accepted as climbed, a robot must on the next step with all of its part, the parts must be contact with next step for at least 2 seconds.
- 9) Also the "General Rules" are applied as in all other categories.

Track Specifications:

- 10) The dimensions of the steps 1, 2 and 3 are 40 cm x 40 cm, the 4th step is 55 cm x 55 cm, the top step is the 5th step is 55 cm x 40 cm, the 6th step is 55 cm x 55 cm, 7, 8 and 9. steps are 40 cm x 40 cm.
- 11) Track contains 9 steps.
- 12) The heights of the steps shall be 10 cm, 11 cm, 12 cm, 13 cm, 14 cm, 13 cm, 12 cm, 11cm, 10 cm from the first step, respectively. The plexies to be located at the sides of the steps will be proportional to the step lengths.
- 13) Bottom part of all steps are empty.
- 14) Referees cannot take responsibility for the robots, if robot will drop.
- 15) Track plan has been given 3D at the bottom.

Scoring:

- 16) The robots must be placed on the steps for at least 2 seconds to deserve the descent points.
- 17) Outputs to first, second and third stages +10 points, exit to fourth level +40, exit to fifth level +80, descent to sixth digit +40, seventh, eighth, ninth digit descent +20 points, final landing +10 points. In case of equality of points, the time to finish the runway will be checked.
- 18) Once the robot has descended from the ladder, it will be +40 points to pass the finishing line. If he does not pass, he will not get points for that one.