



İTÜRO 2023

15. INTERNATIONAL ITU ROBOT OLYMPICS

Color Selecting Category Rules



Istanbul Technical University Robot Olympics 2023

Color Selecting Category Rules

Task Definition:

- In this category, robots are supposed to pick up the prisms from the gather zones and carry them to the drop-off zones of the correct color.

Success Criteria:

- In this category, the success criteria are placing at least three prisms in their right drop-off zones.

Robot Specifications:

- 1) Robots must be less than 30 centimeters in width and less than 50 centimeters in height.

Competition:

- 2) Robots compete in an order.
- 3) Every competitor gets two runs. The higher score will be registered as the final score.
- 4) Robots get 5 minutes to compete.
- 5) Each run will have 5 minutes, separately.



- 6) Robots must drop the prisms which they have taken from the gather zones in one of the right colored drop-off zones.
- 7) Robots can start their runs from any point on the black line.
- 8) Robots can lift or drag the prisms (without damaging the course).
- 9) Robots can carry any number of prisms per travel.
- 10) The competitors may bring a starting apparatus to align the robots at the start if they wish to.
- 11) If a starting apparatus is used, it must not pass over into the colored section of the course.
- 12) Competitors have to take color tolerance into consideration while calculating.
- 13) An example of the prisms and the floor will present in the technic room before the competition.
- 14) The "General Rules of Competitions" apply to this category as well as every other category.

Track Specifications:

- 15) The course has 8 gather zones with 8 prisms that have 6 different colors and 8 drop-off zones with 6 different colors.
- 16) The competing area is the area with the white floor and other colors such as red and green.
- 17) The measurements of the prisms are 3 cm x 3 cm x 6 cm. The 3 cm x 3cm surface touches the ground.
- 18) The walls of the course are black MDF. They are 10 cm in height and 1.8 in width.
- 19) The measurements of the drop-off zones are shown in image 1A. The gather zones measurements are 70 cm x 20 cm and are shown in image 2A.



- 20) The height of the drop-off zones increases by one cm from the runway level and reaches up to 7 cm. For example, zone 1: floor level, zone 2: 1 cm, zone 3: 2 cm, ..., zone 8: 7 cm.
- 21) To help navigate to the rooms (gather zones) there will be a black line that is 1.8 cm in width on the course.
- 22) Robots have to take the prisms from the gather zones to the drop-off zones.
- 23) All prisms will be in the center of the rooms (gather zones).
- 24) Prisms weights are 30 to 40 grams.

Scoring:

- 25) The points will be evaluated after the robots withdraw from the course.
- 26) The higher score will be taken into consideration.
- 27) For the prism to earn a point it must be entirely in contact with the right color.
- 28) The prisms which are not in the gather zones will be evaluated after being multiplied by +100.
- 29) The prisms in the right colored drop-off zones will be evaluated after being multiplied by +200.
- 30) The prisms in the wrong-colored drop-off zones will be evaluated after being multiplied by -50.
- 31) Every prism dropped off in a place besides their correct drop-off zone is -50 points.
- 32) In the event of multiple competitors having the same score, the competitors will be ranked according to their finishing times, the faster competitor will be ranked higher.

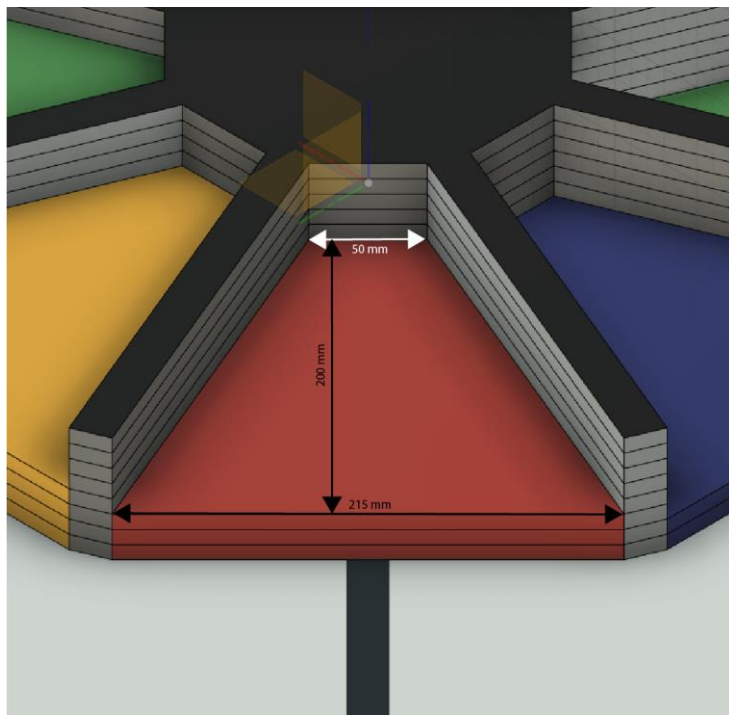


Image 1A – Drop-off Zones: 1:1 cm Scale

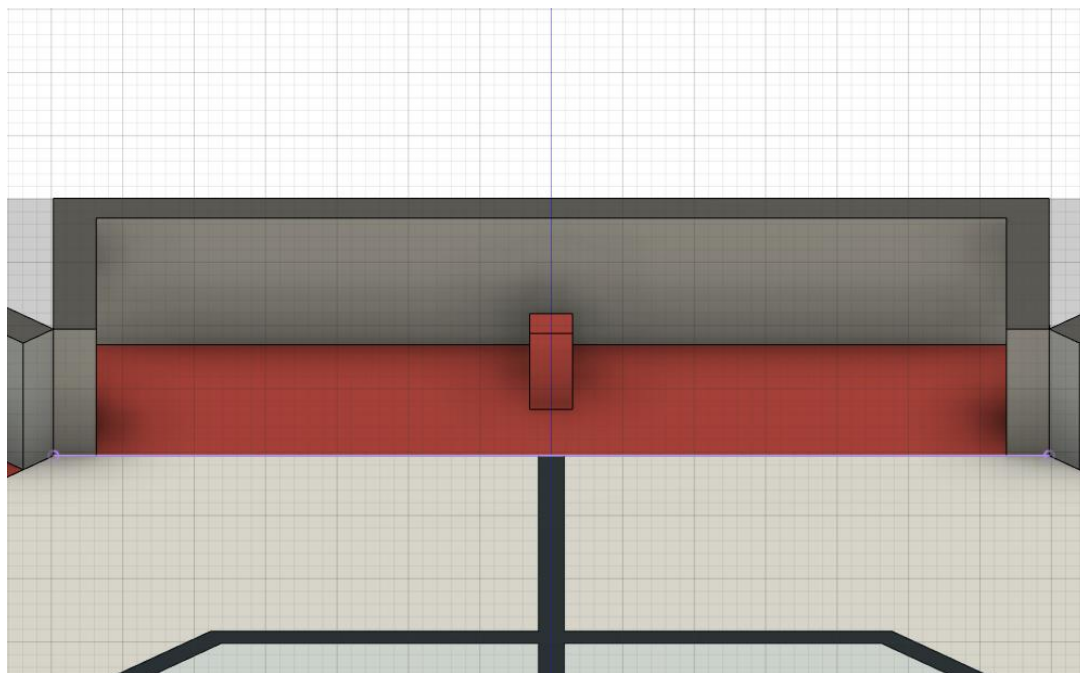


Image 2A – Gather Zones