

# **DEBI Robotics Challenge 2023 - Rules and Guidelines**

## **Challenge Description**

The DEBI Robotics Challenge 2023 is a physical competition to advance robotic software and autonomous capabilities. The challenge is a one-vs-one match between robots in a predefined playground, divided into two identical halves separated by a red line. The goal is to reduce the number of balls in each team's area by moving them to the opponent's side.

## **Rules and Guidelines**

- \* The competition will take place on May 13, 2023, at DEBI's campus in Cairo.**
- \* The robots must be fully autonomous and cannot step onto or pass the red line or playground walls.
- \* The match duration is 10 minutes, and if no team wins, the match will resume for another 3 minutes.
- \* The only way to reduce the number of balls is to move them to the opponent's side.**
- \* Robots can get stuck due to software or mechanical errors, and teams can manually move them to the initial position to start over.

## **Rewards and Eligibility Criteria**

- \* The winning teams will receive a financial award:**
  - + First place: 80,000 EGP
  - + Second place: 60,000 EGP
  - + Third place: 40,000 EGP
- \* All participants must hold Egyptian nationality and be registered undergraduate students at any Egyptian University.
- \* Graduates from no more than 5 years are allowed to participate.**
- \* Each team must consist of 3-5 members, and teams with more than five members will not be allowed to participate.

## **Technical Specifications**

- \* DEBI provides TurtleBot 3 Waffle Pi equipped with OpenMANIPULATOR-X and installed configuration of Ubuntu 20.04 and ROS1 Noetic Ninjemys.
- \* Playground dimensions: 420 cm x 300 cm, walls height is 31 cm.**

**\* Balls: diameter = 5.5 cm, Color = random.**

## **Contacts**

**\* Please send your inquiries to [robotics@debi.gov.eg](mailto:robotics@debi.gov.eg)**

The summary is saved as a PDF file named "DEBIRoboticsChallenge2023Summary.pdf" in the output directory.