

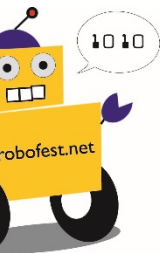
ROBOFEST

UMC

Unknown Mission Challenge

May 18, 2018

ROBOFEST
LAWRENCE TECHNOLOGICAL UNIVERSITY



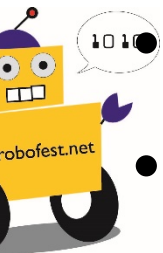
Timeline

12:00pm	Introduction
12:10pm	All parents/coaches exit
12:15pm	Mission Unveiled
2:30pm	Impound closed
2:40pm	Runs begin
4:15pm	Closing and Award Ceremony
4:30pm	Work area clean-up complete

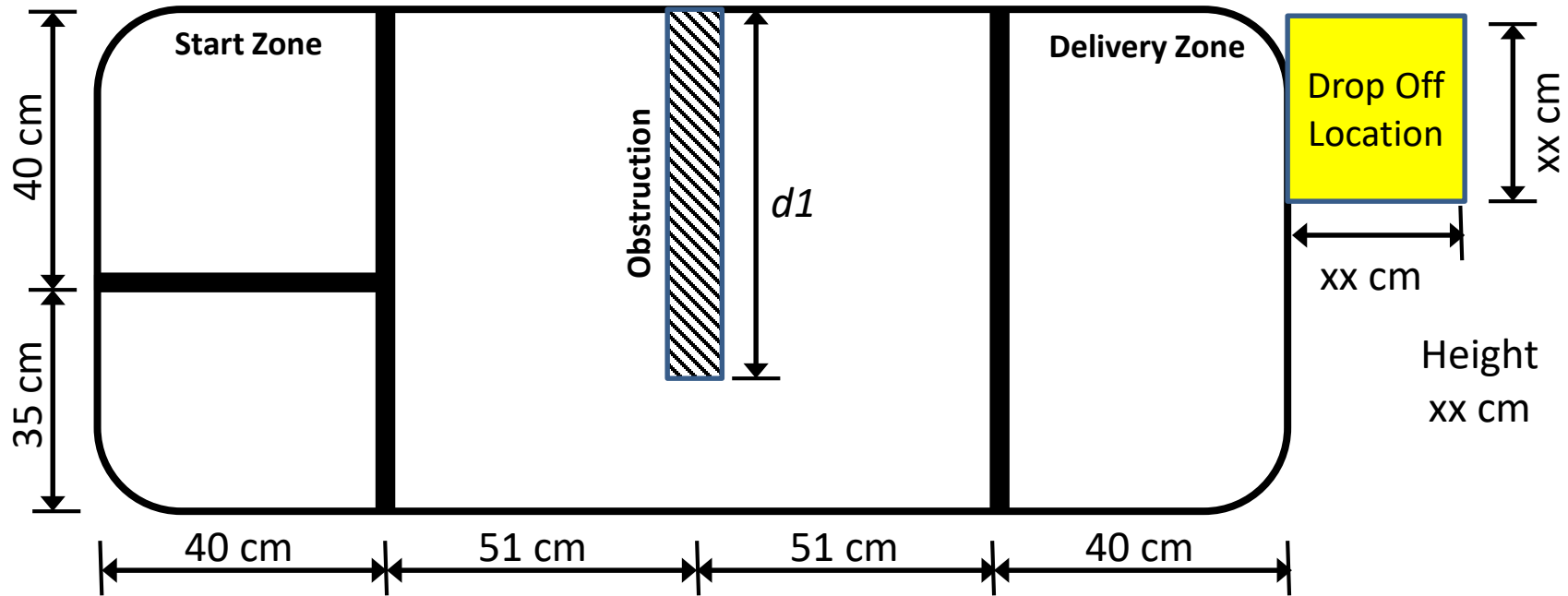


UMC Rules

- Teams may use only approved robot kits
 - LEGO NXT and EV3 only
- Pre-assembled robots cannot be used
- No sensor or motor multiplexors allowed
- Maximum of three motors
- Robots must complete the mission autonomously
- Maximum of three team members
- No communication with parents / coaches



UMC Today – Rapid Delivery



Your robot must begin in the Start Zone and deliver a ping pong ball to the Drop Off Location (cardboard box). After the ball is delivered, your robot must return to the Start Zone. Once the robot completely reenters the Start Zone, you may reload your robot with another ping pong ball and deliver the ball to the Drop Off Location. You are awarded points based on the number of ping pong balls successfully delivered to the Drop Off Location.

Time Limit = 2 minutes

Maximum Robot Size = 35 cm x 35 cm x 35 cm (for the entire run)

Additional Information

Start Zone

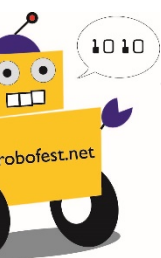
- Contestants may only touch the robot when it is completely in the Start Zone
- If a contestant touches the robot outside the Start Zone, the following occurs
 1. No points are awarded for that delivery
 2. The robot must be returned to the Start Zone
 3. Once in the Start Zone, the robot must serve a 30 second penalty before the team can start another delivery

Delivery

- A delivery begins when a ping pong ball is loaded into a robot and ends when the robot returns to the Start
- Your robot may only deliver one ping pong ball at a time

Obstruction / Drop Off Location

- **The robot must not touch the obstruction. If your robot touches the obstruction, you will not be awarded any points for that delivery.**
- The size of the obstruction is based on the division
 - Junior Division, $d1 = dd \text{ cm}$
 - Senior Division, $d1 = dd \text{ cm}$



Scoring

Scoring Rules

- You are allowed a maximum of 10 ping pong balls to deliver
- Your team will be awarded 1 point for each ping pong ball successfully delivered to the Drop Off Location
- The ping pong ball must stay in the Drop Off Location to receive points
- Delivered ping pong balls remain in the Drop Off Location for the duration of the run
- The time at which each ball enters the drop off location will be recorded

Final Scoring Calculations

- Your final score is the sum of your Run 1 and Run 2 scores
- Your final time will be the sum of your Run 1 and Run 2 final delivery time remaining

Determining a Winner

- The winner will be determined by the highest final score

Tie Breaker – Multiple teams with the same final score

- Highest final time remaining (which team reach their final score the fastest)
- Re-run



Scorecard

UMC 2018 - Rapid Delivery

Team Name:

Team Number:

Round 1
Points

Round 1
Time Left

Round 2
Points

Round 2
Time Left

Ping Pong Ball 1

Ping Pong Ball 2

Ping Pong Ball 3

Ping Pong Ball 4

Ping Pong Ball 5

Ping Pong Ball 6

Ping Pong Ball 7

Ping Pong Ball 8

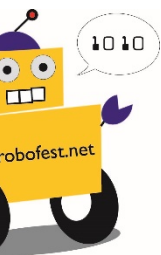
Ping Pong Ball 9

Ping Pong Ball 10

Total Score

Final Score (Sum of scores from Round 1 and 2)

Final Time (Sum of final delivery times for Round 1 and 2)



Competition Etiquette

- The practice tables are shared resources.
- Please split time on the practice tables – each team is limited to two minutes of table use if another team is waiting to use the table.
- Be careful moving around the competition area.
- Do not touch other teams' robots or resources.

