

TECHFEST 2023-24

MECHANZO LEAGUE

TASK

- Teams must create a bot capable of completing the given problem of picking up objects and arranging them in allocated zones
- Teams must bring pre-programmed bot with Arduino or other controllers
- The bot has to be brought unassembled and it is to be assembled with mechanical parts in front of Judges

BOT SPECIFICATIONS

- The bot's dimensions should be less than or equal to 30 cm X 20 cm X 30 cm (lxbxh) failing which the team will be disqualified from the competition (this excludes the dimension of the gripper but includes wheels). The bot can, however, extend its size once the run starts. An error of ($\pm 5\%$) is permitted
- The bot must be controlled with wireless remote (in Senior Category) and can be controlled with wired/wireless remote (In Junior Category)
- Teams can use only Wi-Fi or Bluetooth control mechanisms (in Senior Category) and can use wired/wireless control mechanisms (in Junior Category)
- The dimensions of the remote are not included in the size constraint of the bot
- The participants are allowed to use ready-made gear assemblies
- Bot should not weigh more than 3 kg
- AC power supply will not be provided and cannot be used in the competition
- The potential difference between any two points of the bot should not exceed 12V at any point of time
- DC motors should be used, of maximum 150 rpm, and there should be several mechanical components in the bot
- Use of electrical tools, pneumatics and hydraulics are not allowed
- Failing to meet any of the above specifications will lead to immediate disqualification
- Participants may use Mechanzo Kit or a Similar kit for the mechanical assembly
- It is recommended for the participants to carry an additional power source as a backup.

ARENA

- The outer dimensions of the arena are 1660mm X 1700mm (lxb)
- The object dimensions are 50mm x 50mm x 50mm (lxbxh)
- Deposit zones are of dimensions 80mm X 80mm (lxb)
- Weight of the object will be less than 100 grams
- There are no Checkpoints in the arena
- Objects are indicated with numbers 1-4 (as shown in Fig.1)
- Deposit zones are indicated with alphabets A-D (as shown in Fig.1)

GAMEPLAY

- Participants need to assemble the bot in front of judges within 35 minutes (in Senior Category) and 40 minutes (in Junior Category)
- The bots will be placed at starting point initially
- Both the bots will start moving when the judge says to do so
- Both the bots will be assigned one color either Red or Blue (judge will assign the color)
- Bots must avoid touching the restricted area (shown in Fig. 1) while moving
- The bots must collect the precise color objects and drop them to the appropriate deposit zones of same color

GAME RULES:

- The game can only be played between two teams at once
- Only one team member is allowed to handle the bot. No other team member is allowed to enter the arena
- The bot would be checked for safety before starting and will be disqualified if found unsafe for other participants
- Only one team member is allowed to handle the bot. No other team member is allowed to enter the arena
- The bot will be liable for disqualification if it causes any kind of damage to the arena
- The bot is not allowed to slide the blocks against the ground except for fine adjustments in the Deposit Zone
- Any damage done to the blocks will lead to immediate disqualification
- In case of any disputes/discrepancies, the organizer's decision will be final and binding
- **The organizers reserve the right to change any or all of the above rules as they deem fit**
- Change in rules, if any will be highlighted on the website and notified to the registered teams

JUDGING:

- 5 minutes will be added to the original time if the bot picked up the object and fails to drop it at the target location
- 5 minutes will be added to the original time if the bot fails to start at the arena
- 10 minutes will be added to the original time if the bot touches the Restricted Area
- 10 minutes will be added to the original time if the bot hits the wall
- 5 minutes will be added to the original time if the bot drops the object in between
- 5 minutes will be added to the original time for both teams if the bots collide with each other while performing the task
- 5 minutes will be added to the original time if the bot strikes the other robot by mistake or intentionally while performing the task
- 10 minutes will be deducted from the original time if the bot completes the task

TEAM SPECIFICATIONS:

- A team may consist of maximum of 3 members
- Students from different educational institutes can form a team

ELIGIBILITY CRITERIA

- All students with a **valid identity card** from their respective educational institutes are eligible to participate.

TIMELINE

- The **top 5 teams** from Each **Zonal Qualifier** will qualify for the Grand Finale at Techfest 2023-24 which will be held from 27-29 December 2023.
- The top three teams in the grand finale will be awarded Certificates of Excellence.

PRIZE MONEY

- The Prize money will be awarded to the **top 3 Winners** of the Final Round via NEFT and will be processed within 30 working days after receiving the Prize Money from Sponsors. The Winners have to mail the following information (immediately after the announcement of the results) to akshat@techfest.org.

Subject: Mehcanzo League, team id- your position (example- Mechanzo League, CZ10005-3 rd Position)

Body of mail-

1. Account Holder's Name
2. Account Number
3. Bank name and Branch name.
4. IFSC Code