



**MAHARISHI
UNIVERSITY ONLINE**



Maharishi botFiesta 2023

2nd - 3rd November 2023

Event-

- Robo Talk
- Robowar
- Robo Soccer
- Roboroce
- Robo Pick & Place



ELIGIBILITY

Junior Category : Upto 12th / ITI

Senior Category : Diploma / UG / PG

**Certificate to all participants*



Last Date of Registration
22 October 2023



Prize of upto

₹1,50,000/-

*T&C Apply



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Event Manager



Training Partner



Venue : Maharishi University Of Information Technology
Sitapur Road, P.O-Maharishi Vidya Mandir, Lucknow-226013 (UP)

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Maharishi botFiesta 2023 Rules Book

Registration Start Date- 30- September -2023

Registration Closed Date- 22- October-2023

Prize – Upto 1.5 Lakh

Registration Fees-

Events Name	Senior Level	Junior Level
Robo War	2100/Rs	1100/Rs
Roborace	1100/Rs	500/Rs
Robo Soccer	1100/Rs	500/Rs
Robo Talk	500/Rs	300/Rs
Robo Pick and Place	1100/Rs	500/Rs

Arena and Bot Criteria

Events Name	Arena Dimension	Bot Dimension	Team Members	Remark
Robo War	15ft x 15ft x 15ft(l x b x h)*.	Weight- 15Kg Battery- 24volt(max)	Max-3	Wireless (for Senior Category) Wired/Wireless (for Junior Category)
Roborace	Minimum 90ft*	30cm X 25cm X 15cm (l x b x h) Weight- 3Kg Battery- 12volt	Max-2	Wireless (for Senior Category) Wired/Wireless (for Junior Category)
Robo Soccer	30ft x 20ft*	Dimension-30cm X 25cm X 15cm (l x b x h) Weight- 5Kg Battery- 24 volt (max) Ball Size: Diameter as 6.54–6.8 6 cm	2 Bots in One Team (Max Team members 3)	Wireless (for Senior Category) Wired/Wireless (for Junior Category)
Robo Talk	Presentation Title “Navigating the Future: Unveiling the Remarkable Advancements in Robotics” Maximum Time Duration: 12 Minutes			
Robo Pick and Place	30ft x 20ft*	Dimension -30cm X 25cm X 25cm (l x b x h) Weight - 4Kg Battery - 24 volt(max)	1 Bot in One Team (Max Team members 2)	Wired/Wireless (for All Category)

* Figures/parameters are subject to change.

Robowar

Design and construct a remote-controlled robot capable of fighting a tournament against another robot(s).

Design Specifications

Specification:

- There will be no restrictions on the dimensions of the bot(s).
- The weight of the machine should not exceed 15 Kgs (33.07 Lbs.), which includes the weight of any pneumatic source/tank. All pneumatic tanks/source and batteries should be on board. Only the weight of the remote controller will not be counted.
- Robots with pneumatic or hydraulic mechanisms or electric lifters are allowed.
- Only active weapon bots are allowed
- Manually operated jumping and hopping are allowed. However, the maximum height of any part of the machine should not exceed 6ft during any stage of its jumping/hopping and any damage caused due to this mechanism is solely the responsibility of the team.

Battery and Power:

- The machine must be powered electrically. Use of an IC engine in any form is not allowed. On board batteries must be sealed, immobilized-electrolyte types (such as gel cells, lithium, NiCad, NiMH, or dry cells).
- The electric voltage between any 2 points on the machine should not exceed 24V DC at any point in time. Participants will have to bring their own converters for standard power supply. Participants must protect the battery terminals from a direct short and causing a battery fire, failure to do so will cause direct disqualification.
- Use of damaged, non-leak proof batteries may lead to disqualification.
- Special care should be taken to protect the on board batteries. If the judges find that the battery is insufficiently protected, the team will be disqualified immediately.
- Change of battery will not be allowed during the match.
- Only bots with on-board batteries will be allowed.

Weapon Systems:

Robots can have any kind of magnetic weapons, cutters, flippers, saws, lifting devices, spinning hammers etc. (if they qualify the criteria mentioned below) as weapons.

Following weapons cannot be used:

- a. Liquid projectiles (Foam, liquefied gases)
- b. Any kinds of inflammable liquids

Match Duration:

Matches will consist of 3 minutes of active fight time exclusive of any time-outs. Hence, it is not binding but advisable to keep battery capacity, power usage and machine defences such that they can sustain a 3- minute fight.

Arena Specification

The out-to-out dimension of the arena will be **15ft x 15ft x 1ft (l x b x h)***. As well as arena will be function able. ***these figures/parameters are subject to change.**

Judging Criteria:

Each competitor will be assessed on following judging criteria listed below:

1. The bot should be made on prescribed criteria that are given by the organizer.
2. A robot is declared victorious if its opponent is immobilized.
 - A robot will be declared immobile if it cannot display the linear motion of at least one inch in a time period of 10 seconds.
 - A robot that is deemed unsafe by the judges after the match has begun will be disqualified and therefore declared the loser. The match will be immediately halted and the opponent will be awarded a win.
 - If a robot is thrown out of the arena the match will be stopped immediately, and the robot inside the arena will automatically be declared as the winner.
 - If a bot gets stuck inside the arena due to the deformity of the arena itself. The timer will be stopped and the bot will be released by the safest means.
 - Points will be given on the basis of aggression, damage and control.
3. The judge's decision will be final; no requested from participant will be entertained.

Roborace

Objective:

Design a wireless Bot within the specified dimensions that can operated manually and can travel through all turns of the track. The robot that will complete the specified task in least time will be the winner. Think your robot can overcome any obstacle-big or small in the least of time.

Bot Dimensions:

The dimensions of the bot should not exceed 30 cm in length, 25 cm in width, and 15 cm in height, including all attachments and extensions.

Wireless Operation:

The bot must be entirely wireless and should not have any wired connections to external devices or power sources during the competition.(for Junior section both wired/wireless are allowed)

Battery Voltage:

The bot's power source should not exceed 12 volts. All batteries used must be within this voltage range.

Weight Limit:

The total weight of the robotic competition bot, including all components, attachments, and batteries, should not exceed **3 kilograms**.

Competition Arena:

The competition will take place within a designated arena with defined boundaries and obstacles. The bot should be designed to navigate and complete tasks within this arena.

Technical Failures:

In the event of technical failures or malfunctions during the competition, teams may be allowed a limited number of restarts or repairs, depending on the competition rules.

Judges' Decision:

Decisions made by the judges regarding bot performance and rule compliance are final.

Robo Soccer

Objective:

The objective of this competition is to design and build a robot capable of playing football game within a limited time frame. Teams typically consist of certain 1 robot players per team or two bots players per team as per category.

Field Dimensions:

The field dimensions are usually standardized and may vary depending on the league within management. A standard size for the field is often used, with markings for goals, penalty areas, and the Centre circle.

Game Duration:

Matches are usually played in two halves, with each half lasting a specified amount of time, typically between 5 and 10 minutes.

Game Start:

1. Matches begin with a kick-off from the Centre circle.
2. Robots must be placed in their own half before kick-off.

Scoring: Goals are scored when the entire ball crosses the goal line.

Off sides: Offside rules may or may not be enforced, depending on the competition rules.

Winning Criteria:

1. The team that scores the most goals within the allotted time wins the match.
2. In the case of a tie, competitions may have overtime or penalty shootouts to determine the winner.

Robo Talk

Objective:

1. The presentation can be own design or presentation on given theme.
2. State the specific objectives and goals of your project.
3. Highlight the technical aspects in robotic solution.
4. Explain how proposed design development phase, including materials, components, and technology used.
5. Presentation should be maximum 12 minutes including Question and Answer
6. Explain the design, including software and hardware components, if required
7. Discuss any innovative or unique aspects of your implementation, or presented topic
8. Highlight any innovative technologies or approaches used in the project, if any.
9. If possible, include live robot demonstrations or pre-recorded videos to showcase your project's functionality.
10. Use visuals like slides, diagrams, and images to enhance understanding.
11. Encourage audience interaction through questions and answers.
12. To allocate time for a Q&A session after presentation
13. Be prepared to provide detailed responses to questions from the audience and judges

Robo Pick and Place

Objective:

The objective of this competition is to design and build a robot (wired/wireless) capable of picking up objects from one location and accurately placing them in another location within a limited time frame.

Robot Dimensions:

1. The robot's dimensions must not exceed 30 cm (length) x 25 cm (width) x 25 cm (height) . The Gripper of the bot counts in high from the Ground only.
2. The tolerance of dimension of bot is acceptable +-5%
3. The robot's weight should not exceed 4 kilograms.

Game Elements:

1. Objects: Use standardized objects of various shapes (**include Cube, Cylinder and sphere etc.)** and sizes that the robot needs to pick up and place.
2. The size of the Cube is 100mm, Diameter of the cylinder is 100mm and 120mm height and diameter of the sphere is 71mm.

Placement Area:

Define a designated area where the objects must be placed by the robot.

Competition Rules:

1. Starting Point: All robots must start from a designated starting point.
2. Object Placement: The robot must pick up objects from a specified location and place them in the designated placement area.
3. Object Recognition: Robots should be able to recognize and differentiate between the objects they need to pick up.
4. **Scoring:** Award points for each successfully picked up and correctly placed object within the time limit.
5. **Deductions:** Deduct points for any rule violations, such as touching the robot during the competition or exceeding the size and weight limits.

Judging Criteria:

1. Points Earned: Total points earned by the robot within the time limit of 4 minutes.
2. Time Taken: In case of a tie in points, the robot that completes the task in the shortest time wins.
3. Rule Adherence: Robots that follow the rules and guidelines without violations will be favoured.



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