

1. Robot Battle:

A. Competition Description: Arc Fest presents <Robot Battle>, a contest where a platform is provided for individuals to test their robots in combat. A duel between Machines; a battle of steel and iron; a deadlocked clash-of-bots, until only one Bot remains...

B. Submission Guidelines: Individuals or teams should submit the following description of the Robot that will be used in the competition:

- Name of the team
- Description (Dimensions, Weight, Power Supply, Other, etc.)
- List of components
- Previous Achievements in Robotic Competitions (if any)

C. Robot Specifications:

- Maximum dimensions - 30 cm x 30cm 30 cm (l x b x h).
- The robot can be either wired or wireless.
- Maximum weight - 10 kg (including battery)
- Participants will be provided with 220 Volts, 50Hz standard AC supply. Participants will have to themselves arrange for adaptor or batteries.
- Machines made from Lego parts, or any ready-made kit will be disqualified.
- Each team is allowed to have only one bot for all the rounds.
- The machine must be powered electrically only (Use of IC engine, pneumatic &hydraulic systems not allowed).
- Batteries must be sealed, immobilized electrolyte type (gel cell, lithium, NiCad, or dry cells).
- The electric voltage anywhere in the machine should not be more then "12V" DC at any point of time.

D. Track Specifications:

- The arena will be a flat and caged
- The floor will have 2-3 pit (35-40cm dia.)
- The pit will open/close randomly
- Arena dimension: 150*150cm Approx.

E. General Rules:

- Team Members - 3 (Max.)
- Each member of the team must contain an identity card of his/her respected institute.
- The robot should not damage the arena.
- No test practice will be allowed on the arena.
- The robot must not leave behind any of its parts during the run; else it will result in disqualification.
- Unethical behaviour could lead to disqualification. Faculty coordinators have all the rights to take final decision for any matter during the event.
- Judge's decision will be considered final.
- Certificates of Participation will be given to all teams except the disqualified teams (due to disobeying any of the competition rules).
- 'Best Design Certificate' will be awarded to the team with a Unique Design or Mechanism of the Robot.

F. Game Rules:

- The competition is based on one-on-one Battle; Last Bot Standing "Wins"
- Total game time - 6 mins (two halves)
- Game Protocol:
 - I. If Team A bot pushes the opponent team B bot to first circle Team A will be awarded points.
 - II. If Team A bot pushes the opponent team B bot to second circle Team A will be awarded points.
 - III. If Team A bot pushes the opponent Team B bot into the pit, the Team B will be considered as knockout.
 - IV. Also, if a bot hasn't moved from its spot more than 60 seconds, it will lead to disqualification.
 - V. If any of the robots starts off before starting up call, the counter would be restarted, and the machines will get a second chance. If repeated, then the team will be disqualified.
- The robot must be ready when call is made for your team.

- Team members will be allowed only three times to touch or reset their robots position during the run. However, this will lead to a time penalty and timer will not stop during this course of action.
- No team will get a second chance after completing the track with poor score.

2. Robot Race:

- A. **Competition Description:** Arc Fest presents <Robot Race>, a contest of Speed and Resilience, where the most Fast and Furious Machine Wins the race. Think your robot can overcome all the Obstacles Big-or-Small, at all the Twists-and-turns in the Least of Time...?
- B. **Submission Guidelines:** Individuals or teams should submit the following description of the Robot that will be used in the competition:
- Name of the team
 - Description (Dimensions, Weight, Power Supply, Other, etc.)
 - List of components
 - Previous Achievements in Robotic Competitions (if any)
- C. **Robot Specifications:**
- Maximum dimensions - 25 cm x 20cm x15 cm (l x b x h).
 - The robot may be wired or wireless.
 - The length of the wire (for wired bots) should be long enough to cover the whole track and wire should remain slack during the complete run.
 - Maximum weight - 3 kg.
 - Participants will have to arrange for adaptor or batteries themselves.
 - Machines made from Lego parts, or any ready-made kit will be disqualified.
 - Each team is allowed to have only one bot for all the rounds.
 - The machine must be powered electrically only (Use of IC engine, pneumatic &hydraulic systems not allowed).

- Batteries must be sealed, immobilized electrolyte type (gel cell, lithium, NiCad, or dry cells).
- The electric voltage anywhere in the machine should not be more than “12V” DC at any point of time.

D. Track Specifications:

- The track surface and course line may have unevenness.
- There will be certain obstacles in the racetrack which will try to slow down the robot.
- Arena may consist of Switch Bridge, speed breakers, marble pit, slippery path, rotating ting disc, curve ramp down, seesaw etc.

E. General Rules:

- Team Members - 3 (Max.)
- Each member of the team must contain an identity card of his/her respected institute.
- The robot should not damage the arena.
- No test practice will be allowed on the arena.
- The robot must not leave behind any of its parts during the run; else it will result in disqualification.
- Unethical behaviour could lead to disqualification. Faculty coordinators have all the rights to take final decision for any matter during the event.
- Judge's decision will be considered final.
- Certificates of Participation will be given to all teams except the disqualified teams (due to disobeying any of the competition rules).
- ‘Best Design Certificate’ will be awarded to the team with a Unique Design or Mechanism of the Robot.

F. Game Rules:

- The competition is based on time trial system. There will be a qualifying round for each team.
- The top team from qualifying round makes it to the final round on basis of time trials.
- Wires should remain slack during the race. Pulling the wire to aid the robot in traversing may lead to disqualification.

- If any of the robots starts off before start-up call, the counter would be restarted, and the machines will get a second chance. If repeated, then team will be disqualified.
- Your robot must be ready when call is made for your team.
- The robot will be judged on basis of (in priority):
 - I. Time to complete the track.
 - II. Number of checkpoints cleared.
- No team will get a second chance after completing the track with poor score.

3. Fastest Line Following Robot:

A. **Competition Description:** A Challenge where Robots beat each other at following a track from start to end in the shortest possible time. A game of Speed, Perception and Sequence. Join the Contest to see if your robot can transcend its competition.

B. **Submission Guidelines:** Individuals or teams should submit the following description of the Robot that will be used in the competition:

- Name of the team
- Description (Dimensions, Weight, Power Supply, Other, etc.)
- List of components
- Previous Achievements in Robotic Competitions (if any)

C. **Robot Specifications:**

- Maximum dimensions - 25 cm x 25cm (l x b).
- Once a robot has crossed the starting line it must remain fully autonomous, or it will be disqualified.
- Maximum weight – 3 kg
- In competition ready- made robots are not allowed, the teams cannot participate if they use any ready- made robots, such as - from Lego kits.
- Power supply must be on board.
- Batteries must be sealed, immobilized electrolyte type (gel cell, lithium, NiCad, or dry cells).

- The electric voltage anywhere in the machine should not be more than “12V” DC at any point of time.

D. Track Specifications:

- The line following course shall traverse a black paper rectangle, 180 cm wide and 275 cm long.
- The line shall be white and 1.5-2.5 cm wide.

E. General Rules:

- Team Members - 3 (Max.)
- Each member of the team must contain an identity card of his/her respected institute.
- The robot should not damage the arena.
- No test practice will be allowed on the arena.
- The robot must not leave behind any of its parts during the run; else it will result in disqualification.
- Unethical behaviour could lead to disqualification. Faculty coordinators have all the rights to take final decision for any matter during the event.
- Judge's decision will be considered final.
- Certificates of Participation will be given to all teams except the disqualified teams (due to disobeying any of the competition rules).
- ‘Best Design Certificate’ will be awarded to the team with a Unique Design or Mechanism of the Robot.

F. Game Rules:

- Course Time: Time is measured from the time the robot crosses the starting line until the time it crosses the finish line. A robot is deemed to have crossed the line when the forward most wheel, track, or leg of the robot contacts or crosses over the line.
- Time Limit: A maximum of 3 minutes is allowed for a robot to complete the course. A robot that cannot complete the course in the allotted time shall be disqualified.

- Timekeeping: Time shall be measured by an electronic gate system or by a judge with a stopwatch, based on the availability of equipment. In either case the recorded time shall be final.
- Course Rules: Every line follower robot must pass course at least 1 time and at most 3 times. Referee must choose best result. A robot that wanders off the arena surface will lose one attempt. A robot shall be deemed to have left the arena when any wheel, leg, or track has moved completely off the arena surface.
- Losing the Line: Any robot that loses the line course (but not wanders off the arena surface) must reacquire the line at the point where it was lost, or at any earlier point. Otherwise, robot will lose one attempt.

4. Robot Soccer:

- A. **Description:** A Championship, where a Team of Bots chase a ball around an Arena with the aim to kick more goals than the opponent. A competition that represents Teamwork and Tenacity with the extension of a Machine on wheels trying to score a Goal...
- B. **Submission Guidelines:** Individuals or teams should submit the following description of the Robot that will be used in the competition:
- Name of the team
 - Description (Dimensions, Weight, Power Supply, Other, etc.)
 - List of components
 - Previous Achievements in Robotic Competitions (if any)
- C. **Robot Specifications:**
- Maximum Dimensions - 30cm*30cm*30cm (l x b x h)
 - Maximum Weight - 4 kg.
 - The robot can be wired, wireless or autonomous.
 - The robot should be self-powered with supply not exceeding 12V (on board power supply).

D. Track Specifications:

E. General Rules:

- Team Members - 3 (Max.)
- Each member of the team must contain an identity card of his/her respected institute.
- The robot should not damage the arena.
- No test practice will be allowed on the arena.
- The robot must not leave behind any of its parts during the run; else it will result in disqualification.
- Unethical behaviour could lead to disqualification. Faculty coordinators have all the rights to take final decision for any matter during the event.
- Judge's decision will be considered final.
- Certificates of Participation will be given to all teams except the disqualified teams (due to disobeying any of the competition rules).
- 'Best Design Certificate' will be awarded to the team with a Unique Design or Mechanism of the Robot.

F. Game Rules: