

RULE BOOK



TRACKER

GENERAL RULES

- A team may have a maximum of 4 members.
- A team may comprise members from **different school or colleges**.
- Higher secondary school students , students pursuing graduations, student pursuing post graduations or after 2021 are only allowed to participate in this event.
- Please present your **school or college ID card** at the registration desk when registering to participate .
- No person shall be a member of 2 teams.
- No **2** team should participate with the same robot for this event.
- Adopting **unfair means** will lead to disqualification of the team.
- **Sportsman spirit** is expected from every participant.
- The decision of the **coordinators** will be **final** and binding upon any participants.

EVENT RULES

- ALL TEAMS WILL BE GIVEN A CALIBRATION AND TRIAL TIME OF 15 MINUTES.
- THE ROBOT IS TO FOLLOW A WHITE LINE ON A BLACK SURFACE OR VICE VERSA OR BOTH, THE WIDTH OF THE LINE BEING 3CM (AT MAX).
- THE TIME OF ANY RUN IS MEASURED FROM THE TIME THE ROBOT STARTS MOVING FROM THE POINT MARKED "START" UNTIL THE TIME IT CROSSES THE POINT MARKED "FINISH". A ROBOT IS DEEMED TO HAVE CROSSED THE LINE WHEN THE FORWARD MOST WHEEL, TRACK-BELT, OR LEG OF THE ROBOT CONTACTS OR CROSSES OVER THE LINE.
- MAXIMUM TIME LIMIT FOR THE ROBOT TO COMPLETE THE ARENA IS 4 MINUTES. WHENEVER A ROBOT REACHES A CHECKPOINT (POINT WILL BE MARKED BY A WHITE OR BLACK LINE STRIP ACROSS THE LINE OF LENGTH 9 CM), IT IS SUPPOSED TO INDICATE THAT WITH A SUITABLE INDICATOR (LED, BUZZER, ETC.), FOR ATLEAST A SECOND. THIS INDICATOR SHOULD BE OFF ALL OTHER TIMES. PROPER DETECTION AND INDICATION OF THE CHECKPOINTS WILL GIVE BONUS OF 40 POINTS. "FINISH" POINT NEEDS TO BE TREATED BY THE ROBOT AS A CHECKPOINT TOO.
- THE PARTICIPANTS SHOULD CLEARLY DESCRIBE HOW THEIR ROBOT DETECTS AND INDICATES THE CHECKPOINT. THE COORDINATOR NEEDS TO BE NOTIFIED ABOUT THE POSITION AND THE TYPE OF INDICATOR BEFORE HAND.
- EACH TEAM CAN TAKE A MAXIMUM OF 2 TIMEOUTS OF 2 MINS EACH. THE ROBOT WILL START FROM THE LAST CHECKPOINT INCASE IT TAKES A TIMEOUT. THE TEAMS CAN CHECK THE CALIBRATION AND OTHER PHYSICAL PARTS OF THE ROBOT AT THIS TIME. BUT PROGRAMMING THE ROBOT IS NOT ALLOWED.
- A PENALTY OF 50 POINTS WILL BE IMPOSED FOR EACH TIMEOUT TAKEN.

EVENT RULES

- A TEAM MAY TAKE A MAXIMUM OF 1 RESTART. THE ROBOT WILL START AGAIN FROM THE “START” POINT AND THE TIMER WILL BE RESET. IT WILL BE CONSIDERED AS A NEW RUN.
- THE TEAMS CAN CHECK THE CALIBRATION AND OTHER PHYSICAL PARTS OF THE ROBOT AT THIS TIME. BUT PROGRAMMING IS NOT ALLOWED.
- TEAMS TAKING A RESTART WILL INCUR A PENALTY OF 100 POINTS.
- THE ROBOT NEEDS TO STOP AT THE “FINISH” POINT AFTER THE RUN IS OVER
- THE COMPETITION COMPRISSES MULTIPLE ROUNDS. THE RULES AND ARENA ARE SUBJECT TO CHANGE IN FURTHER ROUNDS.
- IN ANY CIRCUMSTANCES, THE DECISION OF THE COORDINATORS WILL BE FINAL. ALLOWED ONLY 1 SUCCESSFUL RUN.
- THE ROBOT MUST BE COMPLETELY AUTONOMOUS. NO REMOTELY KEPT COMPUTER SHOULD CONTROL THE ROBOTS. NO WIRELESS COMMUNICATION DEVICE IS ALLOWED ON THE ROBOT DURING RUN.

EVENT RULES

- THE ROBOT HAS TO BE DEVELOPED AND DESIGNED BY THE TEAM ITSELF. THE USAGE OF COMMERCIALY AVAILABLE MODULES (SENSORS, DEVELOPMENT BOARDS, ETC.) IS ALLOWED,
- IT IS FORBIDDEN TO USE A COMPLETE ROBOTIC SYSTEM WHICH IS SOLD READY FOR THE PURPOSE OF THE COMPETITION (LIKE LEGO KITS).
- THE SIZE OF THE ROBOT MUST NOT EXCEED 22CM * 20CM * .
- INDIVIDUAL PARAMETERS TO BE MEASURED WITH A TOLERANCE OF 10%.
- ROBOTS MUST HAVE PASSED INSPECTION PRIOR TO COMPETING.
- ROBOTS MUST NOT DAMAGE THE TOURNAMENT AREA WHICH MAY LEAD TO DISQUALIFICATION OF THE TEAM.
- ROBOT MAY USE AN EXTERNAL OR ONBOARD POWER SUPPLY. THE POTENTIAL DIFFERENCE BETWEEN ANY TWO POINTS ON THE ROBOT MUST NOT EXCEED 18 VOLTS.
- COMPUTERS, PROGRAMMERS AND SOFTWARE NEED TO BE ARRANGED BY THE TEAM THEMSELVES.
- IN CASE OF EXTERNAL POWER SUPPLIES, PULLING WIRES TO ALTER THE MOVEMENT OF THE ROBOTS WILL NOT BE TOLERATED AT ALL AND THE RESPONSIBLE TEAM WILL BE DISQUALIFIED.

EVENT RULES

SCORING

ROUND 1:

- THE TIME TAKEN BY THE ROBOT TO FINISH THE RUN WILL BE **RECORDED IN SECONDS**.
- THE TRACK WILL BE A CIRCUIT THE ROBOT NEEDS TO FINISH **2 LAPS** OF THE CIRCUIT.
- A **PENALTY OF 50 POINTS** IS GIVEN FOR EACH TIMEOUT, AND A **PENALTY OF 100 POINTS** IS GIVEN FOR A RESTART.
- A **PENALTY OF 25 POINTS** IS GIVEN FOR EACH HAND TOUCH, THE ROBOT HAS TO RESUME FROM THE POSITION OF HAND TOUCH. **MAXIMUM NUMBERS OF TIMEOUT, RESTART AND HAND TOUCH IN THIS ROUND ARE 2,1 AND 5 RESPECTIVELY**.
- THE ROBOT NEEDS TO STOP FOR AT LEAST 10 SECONDS AT THE CHECKPOINT. A **BONUS OF 50 POINTS** WILL BE AWARDED FOR IT.
- **SCORE =** $1000 - 50 \text{ [PER TIMEOUT]} - 100 \text{ [IF A RESTART IS TAKEN]} - 25 \text{ [NUMBER OF HAND TOUCH]} + 50 \text{ [IF STOP AT THE CHECKPOINT IS DETECTED]} - 4 * [\text{TIME TAKEN IN SECONDS}]$

EVENT RULES

ROUND 2:

- THE TIME TAKEN BY THE ROBOT TO FINISH THE RUN WILL BE RECORDED IN SECONDS.
- THE ROBOT NEEDS TO PROPERLY INDICATE THE CHECKPOINTS USING LEDs, BUZZERS ETC. PROPER DETECTION OF THE CHECK POINTS WILL GIVE A BONUS OF 40 POINTS FOR EACH CORRECT DETECTION.
- A PENALTY OF 50 POINTS IS GIVEN FOR EACH TIMEOUT, AND A PENALTY OF 100 POINTS IS GIVEN FOR A RESTART.
- A PENALTY OF 25 POINTS IS GIVEN FOR EACH HAND TOUCH, THE ROBOT HAS TO RESUME FROM THE POSITION OF HAND TOUCH.
- MAXIMUM NUMBERS OF TIMEOUT, RESTART AND HAND TOUCH IN THIS ROUND ARE 2, 1 AND 5 RESPECTIVELY.
- THE ROBOT NEEDS TO STOP FOR AT LEAST 10 SECOND AT THE CHECKPOINT. A BONUS OF 50 POINTS WILL BE AWARDED FOR IT.
- **SCORE = SAME AS ROUND 1**

EVENT RULES

SCORING

ROUND 3:

- THE DETAILS WILL BE SHARED ONLY TO THE ROUND 2 QUALIFIERS.