

LINE TRACER ANALOG 2024

1. Description

The analog line tracer competition is a type of robot competition which aims to train participants' robot mechanical knowledge and strategies. The line tracer robot has the mission to move along the guide line from start to finish automatically without the help of remote control from the operator

2. Participant

- 1) Students in categories at elementary, middle school and high school.
- 2) Consists of a minimum of 3 students and a maximum of 5 students.
- 3) Fulfill administrative requirements (Registration and Payment)

3. Robot

- 1) Each team must have its robot which is only one robot is permitted on the track.
- 2) Robots are permitted to use self-assembled robots or use kits, which can only be programmed using a computer/laptop via cable (not wireless).
- 3) The robot must be controlled autonomously. The use of remote control, manual control, or passing information (by external sensors, cable, wirelessly, etc.) to the robot is not allowed.
- 4) The robot must be able to work automatically with its power supply in the form of a dry battery. It is forbidden to use a power supply of hazardous materials.
- 5) The dimensions of the robot must not exceed 25cm x 25cm x 25cm
- 6) The maximum voltage of the robot power supply is 12 VDC with a tolerance of 1 volts (max 3 cell batere)
- 7) The committee cannot promise that the field will be free from light interference from outside (for example camera flash lights, room spotlights or other light from outside the room). It is the participant's job to adapt their robot design to the above possibilities.
- 8) Robots must not have parts that could damage the field/arena

4. Arena / Field

- 1) Field mat made of Outdoor Print Banner
- 2) The line on the match field is black on the white floor, or the white line on the black floor
- 3) The width of the line is between 2 cm
- 4) There are start and finish points

5. Match Rules

- 1) Before Competition

- Committee will check several things as follows (robot power supply voltage, robot dimensions, robot ownership/label)
- If the robot does not comply with the provisions, the team is given 5 minutes to adjust the robot's specifications immediately. If it still does not comply with the specified limits. The team can not following this competition

2) During Competition

- Match time is 3 (three) minutes. A maximum of 1 (one) minute is given to the robot team to set up the robot or prepare the robot in the start position, before the match takes place.
- Two teams will face each other (starting at their respective places), to compete quickly with line follower robots from the start position to the finish.
- When the robot is on the arena/track (standby robot position), the robot can only operate by pressing the start button once.
- When the robot is running, participants are prohibited from touching the robot without the referee's permission. If a participant touches the robot without the referee's permission, the team's robot must retry.
- The robot must walk on the track line during the race. If the robot leaves the track (line out) then the robot must return to the previous start position/check point.
- Participants are given the opportunity to retry, there is no limit on the number of retries during the match, when you retry the time continues to run.
- Retry is given at the participant's request to the jury/referee. A retry opportunity is given after a signal from the referee.
- The jury's decision is final and cannot be contested.

6. Scoring

- 1) The winner is determined based on the fastest time from start to finish.
- 2) If in the time provided, neither team has reached the finish line, then the fastest team to reach the furthest checkpoint will be the winner.
- 3) If both teams' robots cannot run, the winner is determined based on the agreement of both teams and the jury.

7. Violation

- 1) During the competition session, coaches/companions are not allowed to enter the match, no communication is allowed between teams, whether teams from the same school or from different schools.
- 2) Robot does not meet the specifications as explained in the rule.
- 3) One robot is used by two or more teams in a match.
- 4) Deliberately disrupting/damaging the opposing team's robot to gain points.



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- 5) Team participants who commit violations will receive a score of 0 (zero/blank) in each assessment.

Rules are adopted from various National and International robot competition activities