



LINE FOLLOWING ROBOT COMPETITION

General Instructions for the Candidates:

- Participants must have their students ID card.
- Any damage to the Institute's property (tools, equipment etc.) will result in a penalty to be reimbursed by the participant.
- Incomplete forms shall not be entertained and accepted.
- Information given must be valid. In case of wrong information, SEE committee reserves the rights to cancel the participation of such teams on spot.
- Evaluators' decision will be final and cannot be challenged.
- Participants must report 30 minutes before the start of competition. No extra time will be provided.
- SEE organizing committee reserves the right to change the rules without any prior notice.

Objective:

- The objective of this contest is for a robot to navigate and follow a black line on a white background incorporating several degrees turns, without losing the line.
- The robot completing the path in the shortest period of time with accurately tracking the course line from start to finish will qualify to compete in the Final Round.

General Rules:

Name of Event: Line following

Robots Per Team: One (For both the rounds).

Time Interval for Teams to Attempts: 3 minutes max

Robot and Arena Specifications:

Robots Weight Range: 5000g

Robot Dimensions: W: 25cm x L: 25cm x H: 7cm

Arena Specification: 8ft Wide, 12ft Long

Robot Control: Autonomous

Engineering Principles: Mechanical Engineering, Electronics Engineering, and Computer Science.

Width of the black line: 1.5 inch (depending on turns and scenario)



Student Engineering Exhibition - 2017

Round Rules:

- **Size and Weight Limits:** Dimensional and weight limits for robots shall be strictly enforced. Robots must have passed inspection prior to competing.
- **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 cross over the line.
- **Time Limit:** A time of maximum 3 minutes is allowed for a robot to complete the course. A robot that cannot complete the course in the allocated time shall be disqualified.
- **Time Keeping:** Time shall be measured by an electronic gate system or by a stopwatch, based on the availability of equipment.
- **Autonomous Control:** Once a robot has crossed the starting line it must remain fully autonomous, or it will be disqualified.
- **Arena Edges:** A robot that wanders off of the arena surface will be disqualified. A robot shall be deemed to have left the when any wheel, leg, or track has moved completely off the arena surface.
- **Losing the Line:** Any robot that loses the line course must require the line where it was lost, or at any earlier (e.g. already traversed) point.
- **Second Attempt:** Any robot that loses the line course and fails to require it will be allowed a single reattempt. The robot must start the course again from the beginning, and if it loses the line course on its second attempt it will be disqualified.
- **Power of Officials:** The decisions of all officials regarding these rules and the conduct of the event shall be final. (However the official may have priority to change any of the prescribed rules mentioned above.)

Course Specification:

- The line following course shall traverse a white paper rectangle, 44" wide and 96" long.
- The line shall be black, 1/2" wide traversing the arena from end to end.
- There shall be no crossovers (i.e. the check points once crossed will not be marked again if the robot repeats the path).
- Switchbacks and hairpins are possible, but repeated switchbacks will be penalized.
- The adjacent sections of the line shall be no closer together than 15cm when measured from the center of each line.
- The line course shall have 1 or more sharp right-angle.