

LINE FOLLOWER

Autonomous Robotics Competition

Ingenium — IIT Indore

Competition Overview

The LINE FOLLOWER competition challenges participants to design and build an autonomous robot capable of accurately following a predefined line track.

The competition emphasizes sensor integration, control algorithm design, and performance optimization to achieve high accuracy and stability during autonomous navigation.

Objective

To design an autonomous robot that can follow a given line track with high accuracy, stability, and minimal deviation.

Team Composition

- Teams may consist of 1 to 3 members

Technical Constraints

- **Maximum Dimensions:** 200 mm × 150 mm × 150 mm
- **Maximum Weight:** 3 kg
- **Sensors:** IR or optical sensors only
- **Control Mode:** Fully autonomous
- **Power Source:** On-board battery only

Arena Specifications

- **Track Width:** 20–25 mm
- **Track Color:** Black line on white background
- **Arena Size:** Up to 3 m × 3 m

Competition Structure

Stage 1: Design & Logic Submission (Online | Pre-Competition)

Teams must submit:

- Sensor configuration and placement
- Control logic overview (PID-based or logic-based)
- Motor and power system description

This stage ensures conceptual understanding and compliance with competition rules.

Stage 2: Calibration & Inspection (Offline | Before Runs)

- Sensor calibration and alignment verification
- Control logic inspection
- Safety and power system checks

Stage 3: Timed Track Runs (Offline | Competition Days)

- Fully autonomous run on a predefined track
- Track includes multiple turns and checkpoints
- Manual intervention during a run will result in penalties

Rules are subject to change at the discretion of the organisers.

Further instructions will be communicated to registered participants.