



PAAVAI ENGINEERING COLLEGE

(AUTONOMOUS)

TECHNFINIX 2K26

DEPARTMENT OF ROBOTICS AND AUTOMATION

1.Track Bot Challenge :

Faculty Coordinator:Mr.M.K.Prabhu(9750703107)

Student Coordinator:1.C.Vinith(8778730458)
2.S.Logeshbabu(6374241757)

Line Following Robot Race: Two autonomous robots compete on a track with separate lines that merge at a central point. Each robot must accurately follow its path, navigate turns, and reach the centre without human intervention. The challenge tests speed, precision, and control efficiency, with the fastest and most accurate robot declared the winner

RULES AND REGULATIONS:

- Team Size: Each team may consist of 2–4 members.
- Robot Type: The robot must be autonomous and follow the designated line without manual control.
- Robot Dimensions: The maximum robot size should be specified by the organizers (e.g., 25 cm × 25 cm × 20 cm).
- Power Supply: The robot must use a safe, self-contained power source. External power supplies are not allowed.
- Track: The robot must follow the marked line on the competition track.
- Starting: The robot must start only when instructed by the referee. A team may not push or manually guide the robot after the start.
- Manual Intervention: Touching or controlling the robot during a run is prohibited unless permitted by the organizers.
- Time Limit: Each run will have a fixed maximum time, such as 3–5 minutes.
- Line Deviation: If the robot completely loses the line, the referee may stop the run or allow a restart according to the event rules.
- Obstacles: If obstacles or junctions are included, the robot must navigate them without human assistance.
- Safety: Robots must not contain dangerous materials, sharp exposed parts, or mechanisms designed to damage another robot or the track.

- **Track Damage:** Any robot that damages the track or competition equipment may be disqualified.
- **False Start:** Moving before the official start signal may result in a time penalty or restart.
- **Scoring:** Ranking may be based on fastest completion time, with penalties added for errors or violations.
- **Retries:** The number of attempts/restarts allowed will be decided by the organizers before the competition.
- **Disqualification:** A team may be disqualified for cheating, unauthorized remote control, unsafe construction, repeated rule violations, or improper conduct.
- **Judge's Decision:** The decision of the judges/referees will be final.
- **Rule Changes:** Organizers reserve the right to modify the rules before the competition if necessary

2.Ladder Logic League :

Faculty Coordinator:Ms.K.Sathya (8870244235)

Student coordinator:1.M.Om Prakash (6382365042)

2.N.Siranjeevi(8925658740)

Programmable Logic Controller (PLC) Challenge: Participants design and implement ladder logic programs to solve real-time industrial automation problems. The competition evaluates logical thinking, troubleshooting skills, and the ability to optimize control systems for efficiency and reliability under given constraints

RULES AND REGULATIONS

- Ladder Logic Challenge – Rules & Regulations
- Participants must register before the event and report to the venue on time.
- The challenge will be conducted individually or as a team, as decided by the organizers.
- Participants must use the PLC/software provided by the organizers.
- The problem statement will be given at the beginning of the challenge.
- Participants must develop the Ladder Logic program based on the given problem.
- The allotted time must be strictly followed. Late submissions may not be accepted.
- Participants must test and verify their program before submitting it.
- External help, internet-based solutions, or assistance from other participants is not permitted unless specifically allowed by the organizers.
- Only the required PLC programming software, tools, and materials provided by the organizers may be used.
- Evaluation will be based on correctness, logic design, functionality, efficiency, and completion time.

- Any attempt to damage equipment or interfere with another participant's system will result in disqualification.
- The decision of the judges and event coordinators will be final and binding.

3. Robo AI Poster Expo :

Faculty Coordinator: Mr. R. Premraj (7010026760)

Student Coordinator: 1. W. Sam dominic (9043042862)
2. S. Sowmiya (7550382273)

AI Poster Presentation: Participants create and present an AI poster on advanced topics in robotics and artificial intelligence on spot, highlighting innovative ideas, applications, and future trends. The event focuses on technical depth, clarity of presentation, and the ability to communicate complex concepts effectively.

RULES AND REGULATIONS:

TIME DURATION: 30 minutes

Poster Guidelines:

- The poster must be relevant to the given topic.
- Content must be technically accurate, clear, and concise.
- Appropriate diagrams, flowcharts, and illustrations may be used.
- The poster should include key concepts, applications, challenges, and future scope.
- Creativity and effective visual communication are encouraged.

Prohibited Activities:

- Copying content or designs from other participants is strictly prohibited.
- Sharing ideas or poster content during the competition is not permitted.
- Unauthorized websites, tutorials, prepared posters, or external assistance are not permitted.
- Mobile phones and other electronic devices may be restricted during the event.
- Any unfair practice may result in disqualification.

4. Paper presentation:

Faculty Coordinator: Dr. R. Rajeshkannan (9944035079)

Student Coordinator: 1. V. Sangeethrajan (8667671002)
2. S. Loganathan (9025394251)

It provides a platform for students to showcase their innovative ideas and technical knowledge. Participants can present papers on emerging technologies and current trends. Topics may include Robotics, AI, IoT, Automation, EVs, Embedded Systems, and more. The event encourages research, creativity, critical thinking, and effective communication. Students from various colleges and engineering disciplines are welcome to participate.

RULES AND REGULATIONS

- **Eligibility:** Open to registered college students. Individual or team participation is allowed as specified by the event organizers.
- **Team Size:** Maximum 2–3 members per team.
- **Topic:** The paper must be related to the announced technical/engineering themes.
- **Originality:** The paper must be the participants' original work. Plagiarized or copied content will be disqualified.
- **Submission:** Submit the paper before the specified registration/submission deadline.
- **Presentation Time:** Each team will get 5–7 minutes for presentation, followed by a short Q&A session.
- **Presentation Format:** Participants should use PowerPoint/PDF slides.
- **Content:** The presentation should clearly include:
 - Title
 - Introduction
 - Problem statement
 - Proposed solution/methodology
 - Results or applications
 - Conclusion
 - References
- **Q&A:** Participants must be prepared to answer questions from the judges.
- **Punctuality:** Participants must report to the venue before their allotted presentation time.
- **Judges' Decision:** The decision of the judges will be final and binding.
- **Disqualification:** Misconduct, plagiarism, exceeding the time limit, or submitting false information may lead to disqualification.
- **Technical Requirements:** Participants are responsible for ensuring their presentation files are ready and compatible with the provided system.
- **Certificate:** Certificates will be provided to eligible participants as per the event organizers' rules.

5. Project expo:

Faculty Coordinator: Mr. K. Mohanraj (9488229010)

Student Coordinator:1.P.Prabanjan(6379957091)

2.Vinayak Ravindran(8301883830)

It provides a platform for students to showcase their innovative projects and practical skills. Participants can present projects based on emerging technologies and real-world applications. Projects may include Robotics, Automation, AI, IoT, Embedded Systems, EVs, and other engineering fields. The event encourages creativity, innovation, teamwork, and problem-solving skills. Students from various colleges and engineering disciplines are welcome to participate.

RULES AND REGULATIONS

Team

- Each team can have a maximum of 4 members.
- All registered team members must participate in the project explanation.
- Participants must report to the venue before the allotted time.
- Registration details must be submitted correctly. Project

Display

- Participants must bring and display their working project/model/prototype.
- The project should be developed by the participants and should demonstrate a clear innovation or practical application.
- Participants must arrange their own required components, laptop, power supply, cables, and other accessories.
- The project must be set up within the given time. Project

Explanation

- Each team will be given 8–10 minutes to explain and demonstrate their project.
- explanation should include:
 - Problem Statement
 - Objective
 - Components/Technology Used
 - Working Principle
 - Demonstration
 - Applications
 - Future Scope
- Judges may ask questions related to the project.
- All team members should have a basic understanding of the project.

Evaluation Criteria

- Projects will be evaluated based on:
 - Innovation & Creativity
 - Technical Knowledge
 - Working & Demonstration

- Practical Application
- Presentation Skills
- Teamwork & Problem-Solving

General Rules

- Participants must maintain discipline and cleanliness at the venue.
- Participants are responsible for the safety of their project and equipment.
- Any unsafe or hazardous demonstration is strictly prohibited.
- Projects must be removed from the venue after the event as instructed by the organizers.
- The judges' decision will be final and binding.
- Certificates will be provided to all participants.