Report on Industrial Visits
Department of Electrical Engineering
Jan-June 2025

REPORT ON VISIT TO RAILWAY COACH NAVEENIKARAN KHARKHANA

Date of Visit: 12th March 2025

Organized by: Department of Electrical Engineering

ITM University Gwalior

Venue: Railway Coach Naveenikaran Kharkhana, Jhansi

1. Introduction

A group of Electrical Engineering students, accompanied by faculty members, visited the Railway Coach Naveenikaran Kharkhana on 12th March 2025. The primary objective of this visit was to gain practical exposure to the modernization and refurbishment processes of railway coaches, with a focus on electrical systems, automation, and sustainability initiatives.

2. Objectives of the Visit

- To understand the role of electrical engineering in railway coach modernization.
- To observe real-time maintenance and electrification processes in railway systems.
- To explore sustainable technologies used in railway refurbishment.
- To enhance interdisciplinary learning by understanding mechanical and electrical integration.

3. Overview of the Visit

The visit commenced with a briefing by senior engineers at the workshop, who provided an overview of the modernization processes. The students were taken through different sections of the facility, where they observed:

- **Coach Overhauling and Wiring Systems:** Understanding the rewiring process and installation of energy-efficient electrical components.
- **HVAC and Power Distribution:** Study of heating, ventilation, and air conditioning (HVAC) systems and power supply management for improved efficiency.
- **Automation and Control Systems:** Exposure to automation in railway operations, including signal processing and control panels.
- **Renewable Energy Integration:** Discussion on the implementation of solar panels and energy-saving technologies in coaches.

4. Key Learnings and Observations

- Students gained insights into electrification techniques used in railway coach modernization.
- Importance of safety protocols and standards in electrical installations.
- Practical application of automation and IoT-based monitoring systems in modern railways.
- Understanding of sustainability measures, such as energy-efficient lighting and regenerative braking systems.

5. Event Outcomes

The visit provided significant learning opportunities aligned with various values, attributes, and SDG goals:

- **Technical Knowledge Enhancement:** (SDG 4 - Quality Education) Improved understanding of electrical systems in railway modernization.
- **Awareness of Sustainable Technologies:** (SDG 9 & 12 - Industry Innovation & Responsible Consumption) Exposure to energy-efficient and environmentally friendly practices in railway refurbishment.
- **Interdisciplinary Learning and Team Collaboration:** (SDG 17 - Partnerships for the Goals) Encouraged teamwork and interaction with professionals from multiple engineering domains.

6. Conclusion

The visit to Railway Coach Naveenikaran Kharkhana was an enriching experience for the students, bridging the gap between theoretical learning and real-world applications. The interaction with industry experts and hands-on exposure to railway electrification and modernization technologies enhanced the students' knowledge and professional competencies. Such visits play a crucial role in shaping future engineers by providing them with a practical outlook on industry standards and sustainable innovations.


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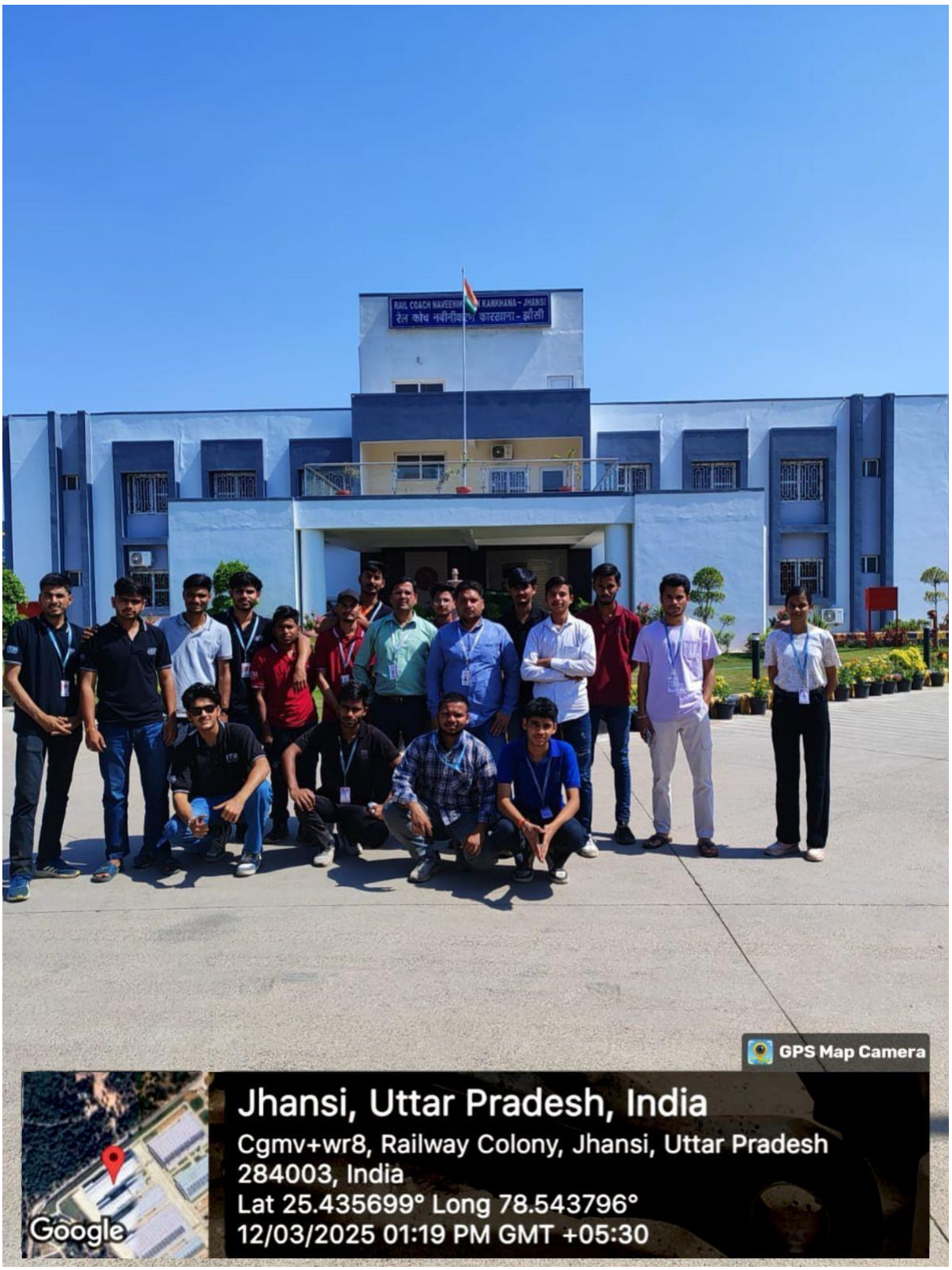
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