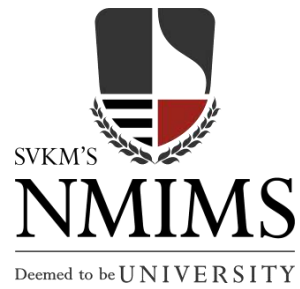
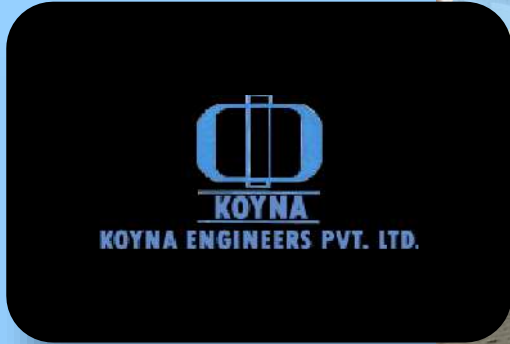


Mukesh Patel School of Technology Management & Engineering, Shirpur

Date: 2<sup>nd</sup> April 2024



# INDUSTRIAL VISIT REPORT



At Koyna Engineers Pvt. Ltd., Satpur, Nashik - 422007, Maharashtra

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# About Koyna Engineers Private Limited

## Company Information

- **Company Name:** KOYNA ENGINEERS PRIVATE LIMITED
- **Year Established:** 1987
- **Promoters:** Mr. D. K. Shirole and Mrs. H.D. Shirole (with extensive technical and practical experience in Electrical and Power Engineering)
- **Registration:** Registered as an SSI Unit with the Director of Industries, Nashik, Maharashtra



## Location

- **Address:** Plot No. 106, Street No. 19, MIDC Area - Satpur, Nashik - 422 007
- **Plot Area:** 2040 Sq. Mtr.
- **Factory Building:** 800 Sq. Mtr.
- **Open Space:** 900 Sq. Mtr.
- **Benefits:**
  - Located in Nashik MIDC Satpur Industrial Estate (District Nashik, Maharashtra)
  - Excellent access to transportation facilities

## Products

KOYNA ENGINEERS PRIVATE LIMITED is a leading manufacturer of electrical equipment, including:

- Power Transformers
- Resin Casted Indoor CT (Current Transformers)
- Oil Immersed Outdoor CT
- Oil Immersed Outdoor PT (Potential Transformers)
- HT Metering Cubicles

## Visit Description

The industrial visit was conducted on **2<sup>nd</sup> April 2024** for a group of **57** MPSTME students from the **6<sup>th</sup>** semester, A.Y., 2023-24.

These comprised students from various branches including B. Tech Information Technology (B. Tech IT), B. Tech Artificial Intelligence and Machine Learning (AIML), and MBA Tech Data Science (MBA Tech DS).

**Dr. Prashant Udawant** served as the Faculty Incharge for the visit, accompanied by **4** coordinating members:

- Prof. Sonia Relan
- Prof. Dhiraj Bhise
- Prof. Pravin Landge
- Ms. Ujwala Dorik

## Timelines

- **7:30 AM:** Departure from campus.
- **9:00 AM:** Breakfast at Dhule outskirts in bus.
- **12:30 PM:** Arrival in Nashik.
- **12:45 PM:** Welcomed at Koyna Engineering Pvt. Ltd.
- **3:00 PM:** Departure from Koyna Engineering Pvt. Ltd.
- **2:55 PM - 5:30 PM:** Lunch in Nashik.
- **7:30 PM:** Departure from Nashik.
- **12:00 AM:** Return to Campus.

## Purpose of Visit

The purpose of our visit to Koyna Engineers Pvt Ltd is multifaceted, aimed at providing students with a holistic understanding of industrial practices and technological advancements in the field of engineering. Specifically, the purpose of the visit include:

1. **Practical Exposure:** The visit seeks to expose students to real-world working environments within the electrical engineering domain. By witnessing firsthand the operations and processes at Koyna Engineers Pvt Ltd, students can bridge the gap between theoretical knowledge gained in the classroom and practical applications in industry.
2. **Understanding Manufacturing Processes:** Through guided tours and interactions with industry professionals, students will gain insights into the intricate manufacturing processes involved in producing electrical equipment such as transformers, metering cubicles, and current transformers. Understanding these processes will enhance students' comprehension of industrial practices and quality assurance protocols.
3. **Exploration of Technological Integration:** Koyna Engineers Pvt Ltd is known for its integration of software-driven methods and automation techniques in its manufacturing processes. The visit aims to showcase how advancements in technology, including computer-aided design (CAD) software and simulation tools, are utilized to optimize production efficiency and product quality.
4. **Experiential Learning:** By immersing themselves in the working environment of Koyna Engineers Pvt Ltd, students will engage in experiential learning opportunities that go beyond traditional classroom instruction. Observing industry professionals at work and participating in hands-on activities will enrich students' learning experiences and broaden their perspectives.
5. **Career Exploration:** The visit also serves as an opportunity for students to explore potential career paths in the electrical engineering industry. Interactions with professionals at Koyna Engineers Pvt Ltd can provide valuable insights into the skills, qualifications, and career trajectories relevant to the field, helping students make informed decisions about their future career aspirations.



## Learning Outcomes:

1. **Cubical Assembly Section:** Students gained insight into the critical role of the Cubical Assembly Section in ensuring the proper assembly of components for electrical distribution panels. Understanding the importance of safety standards and functional requirements in cubicle assembly enhances students' appreciation for meticulous craftsmanship in industrial settings.
2. **DPC Section (Distribution Panel Cubicle):** Through observation and explanation, students learned about the assembly and significance of distribution panel cubicles in electrical distribution systems. Recognizing the pivotal role of these cubicles in controlling and distributing electrical power deepens students' understanding of system functionality and reliability.
3. **Testing Section:** Students acquired knowledge about the rigorous testing procedures employed to verify the functionality, performance, and safety of electrical components. Understanding the importance of quality assurance measures enhances students' appreciation for product reliability and customer satisfaction in industrial contexts.
4. **PT-CT Core Assembly Area:** Students gained insights into the assembly processes of potential transformers (PTs) and current transformers (CTs), essential components in electrical measurement and protection systems. Understanding the significance of accurate core assembly for precise measurement and protection against electrical abnormalities enriches students' understanding of transformer technology.
5. **Epoxy Casting Pressure Gelation Plant:** Observing the epoxy casting process highlighted the importance of encapsulating electrical components in epoxy resin for insulation and protection. Recognizing the role of encapsulation in ensuring the longevity and reliability of electrical equipment enhances students' understanding of materials science in engineering applications.
6. **Vacuum Impregnation Plant:** Students learned about the impregnation process and its role in enhancing the insulation properties of electrical components. Understanding the importance of impregnation for preventing moisture ingress and improving electrical performance deepens students' understanding of manufacturing processes for ensuring product reliability.
7. **Impregnation Area:** Students gained awareness of the impregnation processes used to enhance the insulation properties of electrical components. Recognizing the significance of proper impregnation for durability and reliability underscores the importance of quality control measures in industrial manufacturing.
8. **Heating Oven (Hot Air Oven):** Students learned about the use of heating ovens for curing and drying various electrical components and materials. Understanding the role of controlled heating in enhancing material properties deepens students' understanding of thermal processes in engineering applications.
9. **Transformer Testing Section:** Observing transformer testing procedures provided students with insights into the evaluation of transformer performance, efficiency, and safety. Understanding the importance of comprehensive testing for ensuring product quality and reliability enriches students' understanding of quality assurance practices in industrial settings.



10. **High Voltage Control Panel:** Students gained knowledge about the functions and importance of high voltage control panels in electrical systems. Understanding the role of control and monitoring devices in ensuring system safety and reliability enhances students' understanding of control engineering principles.
11. **Pouring Chamber:** Students learned about the pouring process and its significance in encapsulating electrical components for insulation and protection. Recognizing the importance of proper pouring techniques for product performance and safety deepens students' understanding of manufacturing processes in electrical engineering.
12. **5-ton EOT Crane:** Observing the 5-ton EOT Crane in operation provided students with insights into material handling and assembly operations. Understanding the role of cranes in facilitating manufacturing processes enhances students' appreciation for industrial automation and efficiency.



## Key Insights:

1. **Automation in Instrument Transformer Testing:** Developing software for automatic voltage adjustment in the instrument transformer test set can enhance testing efficiency and accuracy, aligning with modern industrial standards.
2. **Automated Temperature Control in Core Heating Ovens:** Implementing software-driven methods for automated temperature control in core heating ovens can ensure safety and operational efficiency, mitigating risks associated with overheating.
3. **Increasing Transformer Production Capacity:** Exploring opportunities to modify PT Winding Machines to accommodate more winding cores could increase production throughput and streamline workflows.
4. **Automated Wire Winding Processes:** Developing computer programs for automating wire winding processes based on specified parameters can improve efficiency, minimize errors, and ensure consistency in operations.
5. **Meeting Strict Quality Standards:** Addressing the margin of error in current transformation processes is crucial to meet stringent quality standards and maintain customer satisfaction, emphasizing the importance of precision and accuracy in manufacturing.





## Acknowledgment

We extend our heartfelt gratitude to the following individuals for their invaluable support and contributions towards the success of the industrial visit to Koyna Engineers Pvt. Ltd.:

- Dr. R. S. Gaud, In-charge Director, SVKM's NMIMS, Shirpur Campus
- Dr. Venkatadri Marriboyina, Associate Dean, SVKMs NMIMS MPSME, Shirpur Campus
- Dr. Ritesh Dhanare, Head of Department for Information Technology and Data Science
- Dr. Prashant Udawant, Faculty Incharge for the industrial visit
- All members of the college management and administration for their efforts in organizing and approving the visit.

Their guidance, encouragement, and efforts have played a significant role in facilitating this enriching on-field learning experience for our students. We sincerely appreciate their commitment to providing holistic education and practical exposure to our students.

## Conclusion

In conclusion, the industrial visit to Koyna Engineers Pvt. Ltd. has been invaluable for students, offering a comprehensive understanding of the electrical engineering industry. Witnessing the manufacturing processes firsthand has enhanced their grasp of industrial practices and quality assurance protocols. Interacting with industry professionals deepened their knowledge of various electrical equipment types and highlighted the importance of quality control measures. Emphasizing compliance with industry standards and ethical conduct has instilled professionalism in students. Moreover, exploring Koyna Engineers Pvt. Ltd.'s customer-centric approach has provided insights into building robust customer relationships. Additionally, the visit showcased the intersection of electrical engineering with Information Technology, Data Science, and AIML domains, broadening students' interdisciplinary perspective.

Overall, this experience aligns with academic objectives, equipping students with essential skills and insights for future engineering careers.

# Image Gallery





