

# **Mechatronics Department**

## **Report on Two Days Industrial Training**

### **International Automobile Centre of Excellence (IACE)**



Dates of Training: 18<sup>th</sup> and 19<sup>th</sup> September 2025

Participants: 7<sup>th</sup> semester Mechatronics Students

Number of participants: 25 students

Accompanying Staff: 18<sup>th</sup> September Day 1- Mr. Pathik Patel, Dr. Bhavik Ardeshana,  
Mr. Sanjay Parmar

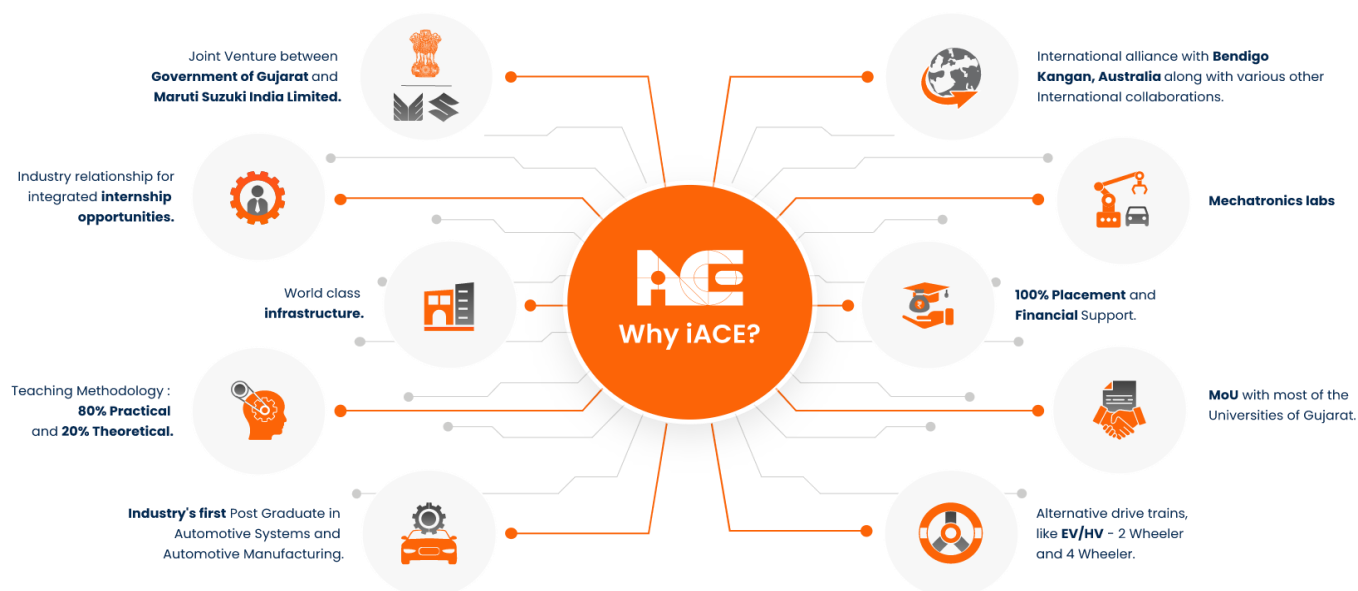
19<sup>th</sup> September Day 2- Mr. Sanjiv Rajput, Dr. Ravi Gandhi,  
Mr. Rakesh Patel

Location: International Automobile Centre of Excellence, Gandhinagar

## **Introduction**

Mechatronics Department had organized two days training program on Robotics for 7th semester students on 18<sup>th</sup> and 19<sup>th</sup> September 2025 as a part of subject **202100702: Robotics & Automated Manufacturing**.

The industrial training at International Automobile Centre of Excellence (IACE) in Gandhinagar was an enlightening and educational experience focused on the study of robots and their functions. The training aimed to provide a comprehensive understanding of robot programming, processing, and applications. Additionally, students gained insights into IACE's facilities, which are extensively designed for automobile and robotics.



IACE is closely affiliated with Maruti Suzuki, one of India's leading automobile manufacturers. This affiliation plays a crucial role in the institute's operations and development. Maruti Suzuki not only organizes and supports IACE but also provides significant funding for its activities. This collaboration ensures that IACE remains at the forefront of automotive education and research, benefiting from Maruti Suzuki's industry expertise and resources. The partnership enables students to gain practical insights and hands-on experience in the latest automotive technologies, bridging the gap between academic learning and industrial practice.

Maruti Suzuki sends its workers and technicians to IACE for training, further enhancing the institute's practical training capabilities. Additionally, Maruti Suzuki is one of the main clients for student placements, providing ample career opportunities for graduates. The institute is a joint venture between Maruti Suzuki and the Government of India, highlighting its significance and the commitment to advancing automotive education and industry standards.

## Activities Organized:

### Day 1:

On the first day, we began with an introduction to the institute by one of the officials, who provided insightful details about its functioning, mission, and opportunities for students. A quiz was conducted before the training to assess our pre-existing knowledge about robots and their functions. Following the quiz, students were divided into three groups to facilitate the training, with each group rotating through different stations.



The first station focused on injection moulding robots, specifically the Fanuc LR Mate 200iD. Students learned how the teach pendant is used to program the robot for tasks such as pick and place in injection moulding of plastics. Various methods of coding the robot were discussed, including using the teach pendant, computer software, and manual programming. The process of injection moulding was explained, including how the robot assists in this process.



Throughout our training, IACE ensured our comfort by providing timely meals in day, including breakfast, lunch, and evening snacks before our departure. The facilities were clean and well-maintained, contributing to a pleasant and conducive learning environment.

In the afternoon, students divided into the software and back-end processes involved in robotics. This session introduced us to how software is downloaded and used to control the robots, covering the processing side of robotics and providing an overview of the software used to program and manage robotic operations.



## Day 2:

The second day focused on welding robots, providing a detailed understanding of their programming and operation. Students learned how to program the robot for welding tasks and how to teach the robot to perform these tasks accurately. The expert explained the various parts of the robot, enhancing our understanding of its functionality. Students were given the opportunity to code the robots themselves applying the knowledge gained during the sessions. The staff was very supportive, allowing to practice and refine coding skills.



## **Outcomes:**

The industrial training to IACE was a highly informative and educational experience. Students gained a comprehensive understanding of how robots work, from programming and processing to real-world applications in the automobile industry. The insights and knowledge acquired during this training will undoubtedly benefit students in their future studies and careers in the field of robotics and automation.

## **Program Outcomes Achieved:**

Following Pos were achieved during this training:

**PO1:** Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO2:** Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO5:** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

**PO9:** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**Course Outcomes (CO) Achieved:**

Following CO Achieved during the training:

**CO-3:** Familiarize the students with the concepts and techniques in robot manipulator Kinematics, enough to evaluate, chose, and incorporate robots in engineering systems.