



# BABA FARID COLLEGE OF ENGG. & TECHNOLOGY

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## Industrial Automation

Name of the Program	Duration	Documents (Topic Covered in report is Curriculum)	Page No.
Industrial Automation	32 Hours	List of the students enrolled(with signature of students)	1
		Model certificates	2-4
		Reports showing assessment procedures and Curriculum	5-8

**\*Topic Covered in report is Curriculum**

**Baba Farid College of Engineering & Technology (Attendance Register)**

Program : B.Tech. Mechanical Engineering , Semester 6th and 8th

Teacher Name: Dr. Sunil Kumar Paswan

Course Code: CC\_IA

Subject : Industrial Automation(LAB)

Session : 2021-22 (Even SEMESTER)

Sr.no	UID	Name	08-03-2022	11-03-2022	15-03-2022	22-03-2022	25-03-2022	29-03-2022	01-04-2022	05-04-2022	08-04-2022	15-04-2022	22-04-2022	26-04-2022	29-04-2022	10-05-2022	13-05-2022	17-05-2022	20-05-2022	24-05-2022	27-05-2022	Total lectures delivered	Classes Attended	Signature	
1	1875001	Sanamdeep Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
2	1875005	Chand Parkash	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
3	1875006	Raman Kumei	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
4	1875007	Japit Singh Brar	ABSENT	ABSENT	ABSENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
5	1875009	kuideep Singh	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
6	1875010	Dharampreet Singh	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
7	1875011	Navdeep Singh	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	
8	1875012	Jaskaran Singh	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
9	1875014	Amnpreet Singh	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
10	1875017	Md Shahad Alam	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
11	1875018	Sarwant Singh	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
12	1875019	Ghulam Mohammod	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
13	1875020	Arshdeep Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	36	
14	1875021	Jaspreet Singh	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	32	
15	1875022	Rahul	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
16	1875023	Navdeep Singh	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	38	28	
17	1875024	Sukdeep Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
18	1875026	Shreya	ABSENT	PRESENT	ABSENT	PRESENT	ABSENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
19	1875027	Kimka Kaur	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
20	1875029	Kunal Sinela	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
21	1875030	Arman Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	38	30	
22	1875031	Jaspreet Singh	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
23	1875038	Richard Taye	ABSENT	ABSENT	ABSENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	38	30	
24	1875038	Rakesh Kumar	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
25	1875039	Mona Kumar	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
26	1875040	Abhishek Kumar	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	38	30	
27	1875001	Fahim Raza	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	38	
28	1875002	Wasil Khurshed	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
29	1875003	Navodt Singh	ABSENT	ABSENT	ABSENT	PRESENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
30	1975006	Ravi Kumar	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	38	
31	1975007	Pankaj Kumar Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	36	
32	1975008	Ashwin D	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	32	
33	1975011	Raushan Alam	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	38	30	
34	1975020	Jagdeep Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
35	1975030	Puneet	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
36	1975031	Viay Kumar	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
37	1975032	AAMIR HUSSAIN RES	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	30	
38	1975033	RASHID AMIN PR	ABSENT	ABSENT	ABSENT	PRESENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
39	1975038	Karan Beni	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	
40	1975039	Zakir Hussain Chowdh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	
41	1975040	Ajaz Yousif Bhat	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	
42	1975041	Mir Mohammad Iqbal	ABSENT	PRESENT	PRESENT	PRESENT	ABSENT	ABSENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	
43	1975042	Aadil Hussain Sheikh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	38	
44	1975043	Randeep Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	36	
45	1975044	Manpreet Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	28	
46	1975046	Sarveer Singh	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	38	34	

# **BABA FARID COLLEGE OF ENGINEERING AND TECHNOLOGY**

**Muktsar Road, Bathinda, Punjab (India)**

(Approved by AICTE & Affiliated to Maharaja Ranjit Singh Punjab Technical University, Bathinda)

## **CERTIFICATE OF COMPLETION**

This is to certify that Ms./Mr. **Sanamdeep Singh** UID **1875001** Program **B. Tech Mechanical Engineering, Semester 6<sup>th</sup>/8<sup>th</sup>** has successfully completed certificate course on “**Industrial Automation**” which was organized by Department of Mechanical Engineering, Baba Farid College of Engineering and Technology, Bathinda during Session 2021-22 (Even Semester).

Bathinda, Punjab(India)



**Dr. Sunil Kumar Paswan**  
Course Coordinator  
Department of ME

**BABA FARID  
GROUP OF INSTITUTIONS**

Bathinda, Punjab(India)



**Dr. Tejinderpal Singh**  
Head  
Department of ME

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## **CERTIFICATE OF COMPLETION**

This is to certify that Ms./Mr. **Chand Parkash** UID **1875005** Program **B. Tech Mechanical Engineering, Semester 6<sup>th</sup>/8<sup>th</sup>** has successfully completed certificate course on “**Industrial Automation**” which was organized by Department of Mechanical Engineering, Baba Farid College of Engineering and Technology, Bathinda during Session 2021-22 (Even Semester).

Bathinda, Punjab(India)



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Department of ME

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## **CERTIFICATE OF COMPLETION**

This is to certify that Ms./Mr. **Raman Kumar** UID **1875006** Program **B. Tech Mechanical Engineering, Semester 6<sup>th</sup>/8<sup>th</sup>** has successfully completed certificate course on “**Industrial Automation**” which was organized by Department of Mechanical Engineering, Baba Farid College of Engineering and Technology, Bathinda during Session 2021-22 (Even Semester).

Bathinda, Punjab(India)



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GROUP OF INSTITUTIONS**

Bathinda, Punjab(India)



**Dr. Tejinderpal Singh**  
Head  
Department of ME



## Report on Industrial Automation

**Eligible Students:** B.Tech. 6<sup>th</sup> and 8<sup>th</sup> Semester

**Date:** 08-03-2022 to 27-05-2022

**Duration of Course:** 32 Hours

**Course Code:** CC\_IA

**No. of Students Enrolled in the course:** 46

**Timing:** 11:30 am pm to 01:05 pm

**Days:** Tuesday and Friday

**Course Coordinator:** Dr. Sunil Kumar Paswan

Industrial Automation course conducted during the session 2021-22 for B.Tech. students. This certificate course was designed to provide a solid understanding of automation technologies and their applications in various industries. The course duration was 32 hours, where 46 enrolled students successfully completed the course.

The course will cover hydraulic and pneumatic systems, including their components such as pumps, compressors, cylinders, and valves. You will learn about pressure regulation, air treatment, fluid power control elements, and graphical symbols associated with hydraulics and pneumatics.

### **Teaching Pedagogy:**

The Industrial Automation Course utilizes a comprehensive teaching approach to ensure effective learning. It combines conceptual explanations, visual learning aids, hands-on activities with the Festo-Pneumatic training setup, real-life case studies, interactive discussions, assessments with feedback, technology integration, and project-based learning. This approach aims to provide students with a solid understanding of automation technologies, practical skills in designing circuits, and the ability to apply automation principles in various industries.

### **Topics Covered:**

**Module-1:** This module introduces automation technologies, discussing the need and benefits of industrial automation. It covers applications in mechanical industries, automation hierarchy,



system comparison, and important terms like mass, force, pressure, work, energy, power, and torque.

**Module-2:** Focuses on hydraulic and pneumatic systems, covering pumps (pressure regulation and types), air compressors, treatment and pressure regulation, hydraulics/pneumatics elements, cylinders, valves (pressure control, flow/direction control, safety), control valves, and actuators.

**Module-3:** Explores circuit design approach for hydraulic and pneumatic systems, covering logic control circuits, sequence operation of cylinders, safety applications, hydraulic system analysis, and practical execution using Festo-Pneumatic training setup.

**Module-4:** Focuses on electro-pneumatic control, covering elements, advantages over hydraulic/pneumatic, solenoid valves, automation sensors (factory, electrical, process), control circuits design using relay logic, sequence control, electro-pneumatic/hydraulic systems, relays, and feedback control systems.

**Module-5:** Explores projects in industrial automation, covering PLC-based control systems, programming languages, ladder logic, HMI/SCADA systems, motion controllers, smart sensors, RFID technology, machine vision, and control applications.

### **Assessment Procedure:**

The students were evaluated throughout the course based on four parameters: Technical Knowledge, Hands-on Practice, Skill Test, and Attendance. Each parameter carried a certain weightage in the overall evaluation.

#### **1. Technical Knowledge in Concerned Field (20 marks):**

This parameter measured their theoretical knowledge, conceptual understanding, and ability to apply that knowledge to practical scenarios.

#### **2. Hands-on Practice (10 marks):**

Hands-on practice evaluated the student's ability to apply their knowledge in practical situations. It measured their proficiency in utilizing tools, techniques, or software relevant to the course.

#### **3. Skill Test (10 marks):**

The skill test assessed the student's competency and proficiency in specific skills related to the course. It focused on practical skills that were essential for the field of study.

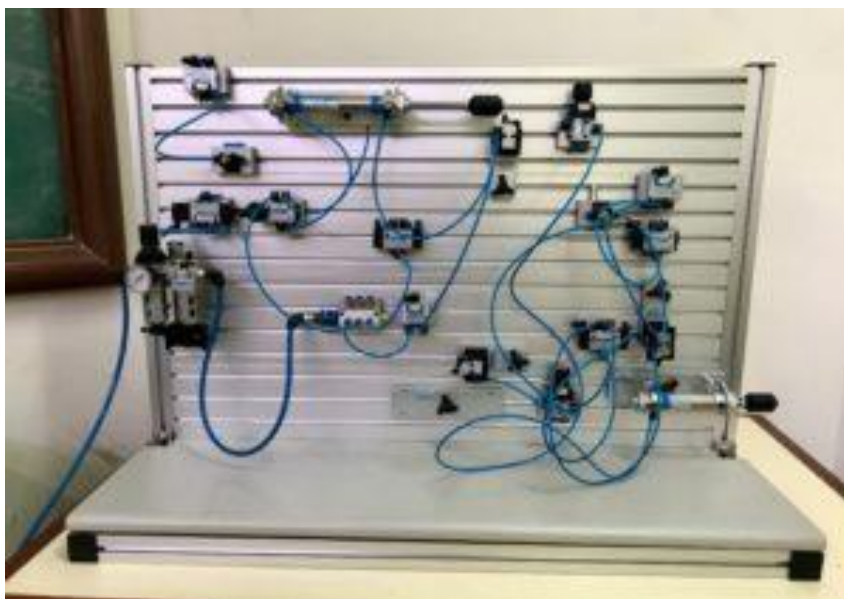
#### **4. Attendance (10 marks):**

Attendance refers to the student's regular presence in the course. It emphasizes the

importance of active participation and consistent engagement throughout the duration of the program.

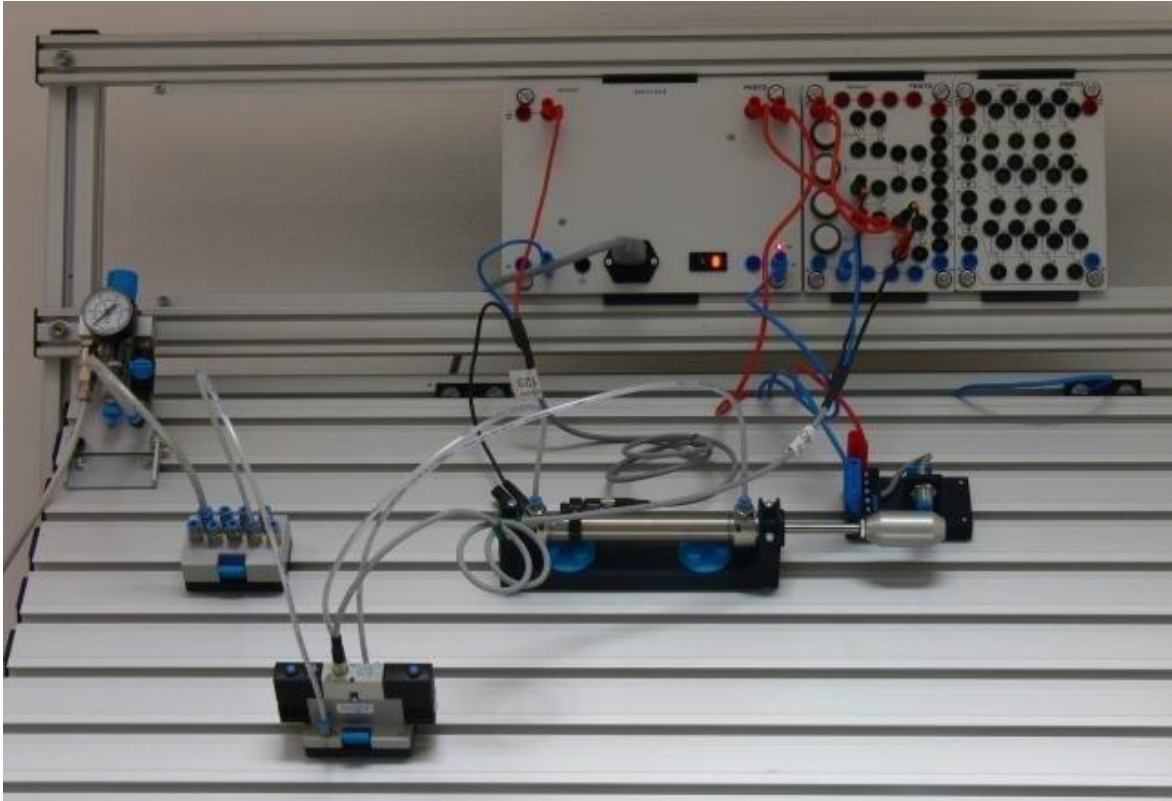
## **Outcome:**

1. **Solid Understanding:** Students achieved a strong grasp of automation technologies, including the fundamental concepts and principles associated with industrial automation.
2. **Practical Skills:** Through hands-on activities using the Festo-Pneumatic training setup, students acquired practical skills in designing and operating hydraulic and pneumatic circuits, valves, and actuators.
3. **Application in Real-Life Scenarios:** The inclusion of real-life case studies enabled students to connect theoretical knowledge to practical applications, allowing them to understand how automation technologies are implemented in different industries.
4. **Technology Integration:** By leveraging simulation software, virtual labs, and online resources, students were exposed to the latest technological tools in automation, preparing them to adapt to advancements in the field
5. Students had hands-on practice of different automation techniques using FESTO Lab.



**Industrial Automation in Festo Lab**





**Industrial Automation in Festo Lab**