

Department: ME | Date: 02 to 04 March 2021

A Three Day Faculty Development Program on Industrial Pneumatics: A Practical Approach

A Faculty Development Program on "Industrial Pneumatics: A Practical Approach" was organized by the Department of Mechanical Engineering, Sree Vidyanikethan Engineering College, Tirupati, from 02 to 04 March 2021 in the Seminar Hall of Mechanical Engineering Department, and the hands-on training was given on Industrial Pneumatics and their applications. The resource person Mr. Sashi Kumar was from SMC Chennai, and the program was conducted to give a practical approach in utilizing the Pneumatic components to the faculty members. The program aims to familiarize the participants with the design, construction, and operation of pneumatic components. This includes the interpretation of circuit diagrams and symbols as well as the construction of control systems. A *Pneumatic system* is a system that uses compressed air to transmit and control energy. Pneumatic systems are used extensively in various industries. Most pneumatic systems rely on a constant supply of compressed air to make them work.



Participants assembling the Pneumatics components



Resource person demonstrating the pneumatics devices

On the first day of the program, the resource person Mr. Sasi Kumar emphasized the significance of hydraulic, pneumatic & electro-Pneumatic systems and different valves in industrial applications. The session is replete with great analogies to memorize complex symbolic representations simply and effectively. This was followed by coding and identifying different valves for connecting the circuit in an efficient and hassle-free manner. The resource person reiterated the significance of circuit and valve diagrams on the second day by highlighting the challenges a learner faces while conducting experiments and discussed few pedagogy tools that foster the learners' accountability. Eventually, the last day of the session culminated with an in-depth analysis of the contrast between pneumatic and electro-pneumatic systems, followed by clarification of doubts and feedback from participants.

Outcomes of the program:

- Develop the ability to select correct components for various applications.
- Read, design, assemble and test basic pneumatic and electro-pneumatic circuits.
- Develop troubleshooting skills to identify component malfunctioning and maintain pneumatic in the primary control system.
- Know the basic principles of compressed air generation, distributions and preparation.

- Understand the process and signal flow of the electrical control section and pneumatic power section.
- Acquire knowledge of the construction and function of electrical switching devices, sensors, pneumatic valves, and solenoid-operated valves.
- Able to analyze and interpret simple pneumatic and electro-pneumatic circuits.
- Able to design, assemble, test, and troubleshoot basic pneumatic and electro-pneumatic circuits.




Demonstration of Electro – Pneumatic devices to the participants



Participants conducting experiments on Pneumatic Electro Pneumatic Workstation

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