



## **Event report on workshops for BBIT students**

Mechatronics Department organised one day workshop on “Hydraulic, Pneumatic, Measurement, and Metrology” for the fourth semester students of Mechanical Engineering and Mechatronics engineering and one day workshop on “Robotics, Automation, Microcontroller & microprocessors” for sixth semester students of Mechatronics Engineering, B & B institute of technology V. V. Nagar on 13<sup>th</sup> March, 2024. The workshop aim was to provide attendees with comprehensive insights into these vital engineering fields.

Total sixty six students and three faculty members participated in these workshops. Faculty members Prof. Harsh Tailor, Prof. Rahul R Chauhan and Prof. Pravin D Solanki along with 41 students of semester IV Mechanical engineering, 21 students of Sem IV Mechatronics Engineering and four students of semester six Mechatronics Engineering participated in the workshops.

Theory and practical session on hydraulics and pneumatics systems were conducted by Prof. Sanjiv Rajput. The theory session related to the principles, applications, and functionalities of hydraulic and pneumatic systems was carried out. The workshop facilitated a platform for knowledge exchange, practical demonstrations, and hands-on experience to enhance understanding in this field.

Prof. Pathik Patel conducted theory session on Electro Mechanical Measurement and Instruments . During this session basic concepts of measuring process and techniques were discussed. Faculty member provided the overview on various measuring instruments like speed, force, torque, temperature, mass, linear and rotary displacements etc. The session ended with doubt solving and open discussion on the mentioned topic. While, Dr. Ketan Tamboli and Prof. Umang Jani demonstrated temperature measurement using Optical Pyrometer, torque measurement using strain gauge, viscosity measurement using Redwood viscometer, force measurement using Load cell in the measurement lab. In Metrology lab, Profile projector, use of optical flat for flatness measurement etc. were demonstrated.

Dr. Ajay Patel introduced third-year Mechatronics students to robotics and robotics lab. Faculty explained the essential components of a robot, such as actuators, sensors, controllers, and end effectors, and their respective functions. The program generation for an ARISTO XT 6 Axis robot was demonstrated. The diverse applications of robotics, including industrial automation, medical robotics, autonomous vehicles, etc. were discussed.

Prof. Bhavesh Hindocha introduced microprocessor and microcontroller based systems with relevant hardware. Students were taught how to interface and program the systems with microcontrollers. Basic idea about various programming languages of PLC was given to the students.

Dr. Saurin Sheth demonstrated the working models of Robots developed by students of GCET as a part of various robotics competitions.

Prof. Bhavik Ardeshana and Prof. Umang Jani guided students during their visit of GCET Idea Lab. The objective of the visit to IDEA Lab was to make the students aware of industry-level instruments such as 3D printers, 3D Scanner, CO<sub>2</sub> laser cutters, CNC WOOD ROUTER, SLA 3D Printer, Vinay Cutting Plotter, 3 in 1 FDM 3D Printer, Metal Pipe Bending Machine, CNC Turning machine, PLC Kits, many more as well as to motivate students to learn about creative work and in the process to get train on creative thinking, problem-solving, collaboration etc.

Throughout the day, faculty members shared their expertise, addressing queries and fostering discussions on emerging trends and best practices. Overall, the workshop provided a valuable platform for learning, networking, and skill enhancement, empowering participants to excel in their respective fields of engineering.

**PHOTOGRAPHS:**

