Microprocessor and Microcontroller Laboratory

The **Microprocessor and Microcontroller Laboratory** provides Electronics and Communication Engineering (ECE) students with practical knowledge of processor-based system design and programming. The laboratory enables students to understand the architecture, instruction set, and interfacing techniques of microprocessors and microcontrollers through hands-on experiments. Students develop and execute assembly language and embedded C programs for various applications, including arithmetic operations, data transfer, memory management, and input/output control. The laboratory also covers interfacing of peripherals such as LEDs, seven-segment displays, LCDs, keyboards, sensors, ADCs, DACs, and communication modules. Through experimentation, students learn hardware-software integration, real-time system design, and embedded system development.

The laboratory enhances programming skills, debugging techniques, and problem-solving abilities essential for designing intelligent electronic systems. It provides practical exposure to the implementation of automation, control, and communication applications using microcontroller platforms. The knowledge gained from this lab serves as a strong foundation for advanced areas such as embedded systems, IoT, robotics, industrial automation, and real-time computing. Overall, the Microprocessor and Microcontroller Laboratory plays a vital role in developing the technical competence and practical skills required for modern Electronics and Communication Engineering applications.



Figure -Micro Processor and Micro controller Laboratory