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| **ECL5503** | **Microprocessor & Microcontroller Lab** | **L-T-P: 0-0-3; Total 12 Sessions** |

***Prerequisites* :** Digital Electronics and Computer organization

***Course Objectives:***

1. Devices and circuits to microprocessors and microcontrollers.
2. Design and develop both the hardware and software for microprocessor /microcontroller based systems.
3. To provide practical introduction to microcontrollers and microprocessors, assembly language programming techniques and interfacing.
4. To connect peripheral
5. Interpret specifications for any microprocessor or peripheral chip

**Experiments:**

1. Programs for 16/8 bit arithmetic operations for 8086/8085 (using Various Addressing Modes).
2. Program for sorting an array for 8086.
3. Program for searching for a number or character in a string for 8086.
4. Program for string manipulations for 8086.
5. Program for digital clock design using 8086.
6. Interfacing ADC and DAC to 8086 / 8051.
7. Interfacing stepper motor to 8086 / 8051.
8. Programming using arithmetic, logical and bit manipulation instructions of 8051.
9. Program and verify Timer/ Counter in 8051.
10. Program and verify Interrupt handling in 8051
11. UART Operation in 8051.
12. Communication between 8051 kit and PC.
13. Interfacing LCD to 8051.
14. Interfacing Matrix / Keyboard to 8051**.**
15. To develop and verify the interfacing ADC and DAC with LPC 2148 ARM Microcontroller.

***Course Outcomes:***

After going through this course the student will be able to

* Develop the basic skills on hardware and software/programming of microprocessor
* Enhance assembly language programming skills for simple and complex calculations used in various engineering disciplines.
* Capable to innovative and design intelligent systems, called embedded systems, using microprocessor for special purpose.
* Involve in verification of functionality, speed and power of microprocessor based system.