

Course code	Course Name	L-T-P- Credits	Year of Introduction
IT331	Microcontroller Lab	0-0-3-1	2016
Prerequisite: CS305 Microprocessors & microcontrollers			
Course Objectives <ul style="list-style-type: none"> To study assembly language programming in 8051. To study interfacing of various peripherals using 8051. To design and develop applications using 8051. 			
List of Exercises / Experiments (Minimum of 9 mandatory out of 11) Programming experiments using 8051 Trainer Kit. <ol style="list-style-type: none"> Familiarization of 8051 Microcontroller Kit Addition and Subtraction of 16 bit numbers. Multiplication and division of 8 bit numbers. Sorting, Factorial of a number. LCM and HCF of two 8 bit numbers Square, Square root, Fibonacci series. <p style="text-align: center;">Interfacing experiments</p> <ol style="list-style-type: none"> DAC interface Display interface. Realization of Boolean expression using port. Frequency measurement by counting the number of pulses in a fixed amount of time. Frequency measurement by measuring the time period between two consecutive pulses. <p>Class Project (Minimum one mandatory per group)</p> <ol style="list-style-type: none"> Liquid /Level indicator with Alarm using 8051 microcontroller Interfacing Keyboard with 8051 microcontroller Digital Clock with 8051 microcontroller 			
Expected Outcome <ul style="list-style-type: none"> The students will be able to develop a system using 8051 microcontroller 			
References <ul style="list-style-type: none"> Muhammad Ali Mazidi, The 8051 microcontroller and Embedded System Kenneth Ayala, The 8051 Microcontroller 3Scott, The_8051_Microcontroller. <p>Websites:</p> <p>www.8051projects.info</p> <p>www.engineersgarage.com</p> <p>www.mikroe.com</p> <p>www.8052.com</p> <p>For development tools:</p> <p>www.keil.com</p> <p>www.atmel.com</p>			