

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