

<b>SEMESTER</b> <i>Seventh</i>	<b>DEPARTMENT</b> <i>Control Engineering</i>	<b>COURSE TITLE</b> <i>Microcontrollers Lab.</i>
<b>COURSE CODE</b> <i>EC706</i>	<b>HOURS</b> 3 <b>UNITS</b> 1	<b>COURSE SPECIFICATIONS</b> <i>Practical Content</i>
<b>1. Introduction MPLAB and instruction set:</b> <ul style="list-style-type: none"> <li>➤ Creating a project using MPLAB</li> <li>➤ Specification and configuration of PIC16f628.</li> <li>➤ Writing a simple program with basic instructions using instruction set in datasheet.</li> <li>➤ Downloading the software program to PIC chip.</li> </ul>		
<b>2. Arithmetic and Logic Operations:</b> <ul style="list-style-type: none"> <li>➤ Writing a program to introduce the different operations in datasheet.</li> <li>➤ Number system conversion, e.g. converting ASCII code to Hex Codes.</li> </ul>		
<b>3. Delay Loops:</b> <ul style="list-style-type: none"> <li>➤ Writing a delay on certain value.</li> <li>➤ Connecting LEDs with PIC port.</li> <li>➤ Flashing LEDs with no delay.</li> <li>➤ Flashing LEDs with delay.</li> <li>➤ Flashing 8 LEDs with delay in series.</li> </ul>		
<b>4. 7 Segment Display:</b> <ul style="list-style-type: none"> <li>➤ Introduction of Lookup table.</li> <li>➤ Using subroutine and jump.</li> </ul>		
<b>5. Interrupt:</b> <ul style="list-style-type: none"> <li>➤ Introducing interrupt sources.</li> <li>➤ Using interrupt applications : e.g. controlling flashing speed of a flasher</li> </ul>		
<b>REFERENCES:</b> <ol style="list-style-type: none"> <li>1. John Morton, <i>The PIC Microcontroller: Your Personal Introductory Course</i>, 3<sup>rd</sup> edition, Newnes.</li> <li>2. PIC16F628 datasheet.</li> </ol>		