

**SARDAR PATEL UNIVERSITY**  
**Programme: B.Sc**  
**Semester: IV**  
**Syllabus with effect from: November - 2012**

<b>Paper Code: US04CELE02</b>	<b>Total Credit: 3</b>
<b>Title of Paper: Instrumentation &amp; Digital Electronics</b>	

<b>Unit</b>	<b>Description in detail</b>	<b>Weightage (%)</b>
<b>I</b>	<b>Logic Families and XOR-XNOR Gates</b> Logic Specifications, TTL Logic Family, XOR-XNOR Gates and their applications, Parity Checker, Code Converter, Controlled Inverter, Comparator, Half and Full Adder, Half and Full Subtractor.	
<b>II</b>	<b>Flip Flops, Multivibrators and their applications</b> R S Flip Flop, Clocked R S Flip Flop, D Flip Flop, Edge Triggered D Flip Flop, J K Flip Flop, JK Master/Slave Flip Flop, Applications of Flip Flop, ANSI/IEEE Symbols for Flip Flops Schmitt Trigger, Astablemultivibrator.	
<b>III</b>	<b>Counters</b> Binary Ripple Counter, Asynchronous Counter 4 Bit, Mod -5,6 and 7, Synchronous Counter Mod6,7and 8,Combinational Counter Mod 5 and 7, Advantages and Disadvantages of various Counters	
<b>IV</b>	<b>Applications of Counters</b> Binary Decade Counter, Decoding Gates, Decoding Waveforms, BCD Counter, Up/Down Counter, Shift Counter	

**Basic Text & Reference Books :-**

- Modern Electronics Instrumentation & Measurement Techniques(Unit-I) By A. D. Helfrick & W. D.Cooper
- Digital Electronics By William Gothmann(Unit-II)
- Digital Principles & Applications(Unit-III & IV) by A. P. Malvino& D. P. Leach
- Digital fundamental By Thomas L. Floyd
- Digital and Micro processor Electronics By Byron W. Putman
- Digital Electronics By C. E. Strangio
- Digital Computer Electronics(Unit-IV) ( An Introduction to Microcomputer) By A. P. Malvino

