060010211 – CC6 Digital Electronics

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	Sub Unit	No. of Lecture (s)	Topics	Reference Chapter/Additional Reading	Methodology	Evaluation Parameters
Unit 1: Introduction of Basic Electronic Components						**[06 Hours]**
	1.1	2	Basic of Semiconductor, Diodes	MD #3- pg. No. 75-91 MD #3- pg. No. 91-98	Presentation/ Chalk and talk	
	1.2	1	Resistor			
	1.3	1	Transistor			
	1.4	2	Study of Field Effect Transistor			
Unit 2: Boolean Algebra and Simplification Techniques						**[09 Hours]**
	2.1	1	Introduction to Boolean Algebra	DE #5 – pg. No. 161-163	Chalk & Talk	Unit Test I
	2.2	4	Postulates and Theorems of Boolean Algebra	DE #5 – pg. No. 163-174		
	2.3	4	Simplification Techniques: Sum-of-Products, Product-of-Sum, Expanded Forms, Canonical Forms, Karnaugh Map	DE #5 – pg. No. 174-179,187-198		
Unit 3: Arithmetic Circuits						**[09 Hours]**
	3.1	1	Combinational Circuits	DE #5 – pg. No. 203-205	Chalk & Talk	
	3.2	2	Arithmetic Circuits: Half and Full Adder, Half and Full Subtractor	DE #5 – pg. No. 206-213		
	3.3	1	Adder –Subtractor	DE #5 – pg. No. 214		
	3.4	2	BCD Adder	DE #5 – pg. No. 215		
	3.5	2	ALU	DE #5 – pg. No. 227		
	3.6	1	Multipliers			
4. Combinational Logic Circuits						**[10 Hours]**
	4.1	2	Multiplexer	DE #5 – pg. No. 239-248	Chalk & Talk	
	4.2	2	Encoders	DE #5 – pg. No. 250-253		
	4.3	2	Demultiplexer	DE #5 – pg. No. 254-260		
	4.4	2	Decoders			
	4.5	2	Parity Generation and Checking	DE #5 – pg. No. 260-261		
5. Flip-Flops						**[06 Hours]**
	5.1	1	Introduction	DE #5 – pg. No. 284-302	Chalk & Talk	Unit Test II
	5.2	4	Types of Flip-Flop: R-S, J-K, D			
	5.3	1	Flip-Flop Applications	DE #5 – pg. No. 307-309		
6. Counters and Registers						**[08 Hours]**
	6.1	3	Asynchronous and Synchronous Counter	DE #5 – pg. No. 317-319	Chalk & Talk	
	6.2	3	Binary Ripple Counter	DE #5 – pg. No. 319-324		
	6.3	2	Shift Register	DE #5 – pg. No. 350-359		

Text Books :

1. Maini, A. K. - Digital Electronics – Principles and Integrated Circuits - Wiley India.[DE#]
2. Kamal, R. - Digital Systems – Principles and Design - Person Education
3. Jain R. P. - Modern Digital electronics -Tata McGraw Hills. [MD#] -- reference book.