

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Electrical and Electronics Engineering

Lesson plan of faculty member for the academic year 2017-18

Class: II B Tech

Branch-Section: EEE

Semester: II

Subject: Switching Theory and Logic Design (STLD)

Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
<b>UNIT – I: Number System and Boolean Algebra and Switching Functions</b>		
1	Introduction	19 December 2017
2	Number systems	20 December 2017
3	Base Conversions	21 December 2017
4	Complements of Numbers	21 December 2017
5	Tutorial: Problems on Number systems and complements	19 December 2017
6	Complement subtraction	27 December 2017
7	Binary Coded Decimal Code and its Properties, Unit Distance code	28 December 2017
8	Error detecting codes	28 December 2017
9	Error correcting codes	2 January 2018
10	Fundamental Postulates of Boolean algebra	3 January 2018
11	Basic Theorems and Properties	4 January 2018
12	Switching functions	4 January 2018
13	Tutorial: Problems on Hamming codes	2 January 2018
14	Canonical forms	9 January 2018
15	Standard forms	10 January 2018
16	Algebraic simplification of Digital logic gates	11 January 2018
17	Properties of XOR gates	11 January 2018
18	Tutorial: Problems on algebraic simplification	9 January 2018
19	Multilevel NAND realization	16 January 2018
20	Multilevel NOR realization	17 January 2018
<b>UNIT – II: Minimization and Design of combinational circuits</b>		
21	Introduction to combinational circuits	18 January 2018
22	Minimization of switching functions	18 January 2018
23	Tutorial: Problems on NAND and NOR realization	16 January 2018
24	Karnaugh Map Method	23 January 2018
25	Don't care map entries	24 January 2018
26	Tabular method	25 January 2018
27	Adders, Subtractors	25 January 2018
28	Tutorial: Problems on K-maps	23 January 2018
29	Multiplexers	30 January 2018
30	De-multiplexers	31 January 2018
31	Assignment test – 1	1 February 2018
32	Decoders, Encoders	1 February 2018
33	Code converters	30 January 2018
34	Hazards and hazard free realizations	6 February 2018
35	Tutorial: Review of I & II units	6 February 2018
<b>UNIT – III: Sequential Machines Fundamentals and Applications</b>		
36	Sequential Machines Fundamentals: Introduction	14 February 2018
37	Basic Architectural distinctions between Combinational and Sequential circuits	15 February 2018
38	The Binary Cell	15 February 2018
39	Fundamentals of Sequential Machine Operation	20 February 2018
40	Latches	21 February 2018
41	SR and JK Flip Flops	22 February 2018
42	Race around condition in JK Flip Flop	22 February 2018
43	Tutorial: JK Master Slave Flip Flop	20 February 2018

Lecture Number	Topics to be covered	Date (s)
44	D and T Flip Flops	27 February 2018
45	Excitation tables	28 February 2018
46	Tutorial: Conversion between Flip Flops	27 February 2018
47	Design of a Clocked Flip Flop	6 March 2018
48	The Clocked T Flip Flop	7 March 2018
49	The Clocked J-K Flip Flop	8 March 2018
50	Timing and Triggering Consideration	8 March 2018
51	Tutorial: Conversion from one Flip Flop to another	6 March 2018
52	Clock Skew	13 March 2018
53	Shift Register, Data transmission in Shift Registers	14 March 2018
54	Operation and configuration of Shift Registers	15 March 2018
55	Bidirectional Shift Registers	15 March 2018
56	Tutorial: Applications of Shift Registers	13 March 2018
57	Design and operation of Ring and Twisted Ring Counter	20 March 2018
58	Operation of Asynchronous and Synchronous Counters	21 March 2018
<b>UNIT – IV: Sequential Circuits – I</b>		
59	State Diagram, Analysis of Synchronous Sequential Circuits	22 March 2018
60	Approaches to the Design of Synchronous Sequential Finite State Machines	22 March 2018
61	Tutorial: Synthesis of Synchronous Sequential Circuits, Serial Binary Adder	20 March 2018
62	Sequence Detector, Parity bit Generator	27 March 2018
63	Design of Asynchronous and Synchronous Modulo N-Counters	28 March 2018
64	Assignment test – 2	29 March 2018
<b>UNIT – V: Sequential Circuits – II</b>		
65	Sequential Circuits: Finite state machine-capabilities and limitations	29 March 2018
66	Tutorial: Mealy and Moore models – minimization of completely specified and incompletely specified sequential machines	27 March 2018
67	Partition technique	3 April 2018
68	Tutorial: Merger chart method – concept of minimal cover table	3 April 2018

**Text books:**

1. Zvi Kohavi & Niraj K Jha, "Switching and Finite Automata Theory," 3/e, Cambridge, 2016.
2. Morris Mano, "Digital Design," 5/e, Pearson, 2015.

**Reference Books:**

1. RP Jain, "Modern Digital Electronics," McGraw Hill, 2003.
2. A Anand Kumar, "Switching Theory and Logic Design," 3/e, 2010.
3. AP Godse & DA Godse, "Switching Theory and Logic Design," 2/e, 2004.

Name and signature of the faculty: Asha Kiranmai S -----

Name and signature of Head of the Department: Manju Bhargavi R -----