

Department of Electronics and Communication Engineering**Bhoj Reddy Engineering College for Women: Hyderabad**

Lesson Plan of faculty member for the academic year 2015 – 2016

Name of the faculty member and Department: B. Jyothsna, ECE

Subject: Switching Theory and Logic Design

Class: II B.Tech.

Branch & Section: ECE-A

Semester: I

No. of lectures per week: 4+1 (Tutorial)

Lecture Number	Date(s)	Topic to be covered
	UNIT- I	Number systems and boolean algebra and switching functions
1.	1/7/15	Number systems, Base Conversion methods
2.	3/7/15	Number systems, Base Conversion methods
3.	4/7/15	Complement of numbers
4.	--,-1/7/15,3/7/15	Tutorial G1,G3,G2
5.	7/7/15	Binary Codes, BCD and its properties
6.	8/7/15	Unit Distance Codes, Alpha Numeric Codes
7.	10/7/15	Error Detecting and Correcting Codes
8.	11/7/15	Boolean algebra basic theorems and Properties
9.	7/7/15,8/7/15,10/7/15	Tutorial G1,G3,G2
10.	14/7/15	Boolean functions
11.	15/7/15	Canonical and standard forms
12.	17/7/15	Algebraic Simplification of Digital Logic gates
13.	14/7/15,15/7/15,17/7/15	Tutorial G1,G3,G2
14.	21/7/15	Properties of XOR gates. Universal gates
15.	22/7/15	Multilevel NAND, NOR realizations
	UNIT- II	Minimization and design of combinational circuits
16.	24/7/15	Introduction minimization with theorem
17.	25/7/15	The Karnaugh Map Method 2 and 3 variable maps
18.	21/7/15,22/7/15,24/7/15	Tutorial G1,G3,G2
19.	28/7/15	The Karnaugh Map Method 4,5 and 6 variable maps
20.	29/7/15	Prime and Essential Prime implicants
21.	31/7/15	Don't care map entries, using the maps for simplifying
22.	1/8/15	Tabular method, Partially specified expressions
23.	28/7/15,29/7/15,31/7/15	Tutorial G1,G3,G2
24.	4/8/15	Multi output minimization, Combinational design
25.	5/8/15	Arithmetic circuits
26.	7/8/15	Comparator, decoder
27.	8/8/15	Encoders, Multiplexers
28.	4/8/15,5/8/15,7/8/15	Tutorial G1,G3,G2
29.	11/8/15	Code converters, wired logic, Tri state bus system
30.	12/8/15	Practical aspects related to Combinational Logic design
31.	14/8/15	Practical aspects related to Combinational Logic design
32.	11/8/15,12/8/15,14/8/15	Tutorial G1,G3,G2
33.	18/8/15	Hazards and Hazard free relations
	UNIT- III	Sequential machines fundamentals
34.	19/8/15	Comparison of combinational and sequential circuits
35.	21/8/15	The binary cell, Fundamentals of sequential machine operation
36.	22/8/15	Latches and Flip Flops
37.	18/8/15,19/8/15,21/8/15	Tutorial G1,G3,G2
38.	1/9/15	The D latch Flip Flop

39.	2/9/15	The Clocked T Flip Flop
40.	4/9/15	Clocked J K Flip Flop
41.	5/9/15	Conversion from one type of Flip Flop to another
42.	1/9/15,2/9/15,4/9/15	Tutorial G1,G3,G2
43.	8/9/15	Conversion from one type of Flip Flop to another
44.	9/9/15	Timing and Triggering considerations, Clock skew
UNIT- IV		Sequential circuit design and analysis
45.	11/9/15	Introduction, State diagram
46.	12/9/15	Analysis of synchronous sequential circuits
47.	8/9/15,9/9/15,11/9/15	Tutorial G1,G3,G2
48.	15/9/15	Approaches to the design of synchronous sequential finite state machines
49.	16/9/15	Design aspects, steps, Realization using flip flops
50.	18/9/15	Design of Single mode counter
51.	19/9/15	Design of Single mode counter
52.	15/9/15,16/9/15,18/9/15	Tutorial G1,G3,G2
53.	22/9/15	Design of ripple counter
54.	23/9/15	Design of ring counter
55.	25/9/15	Shift register
56.	26/9/15	Shift register sequences
57.	22/9/15,23/9/15,25/9/15	Tutorial G1,G3,G2
58.	29/9/15	Ring counter using shift register
UNIT- V		Sequential circuits
59.	30/9/15	Finite state machines capabilities and limitations
60.	3/10/15	Melay and Moore models
61.	29/9/15,30/9/15,----	Tutorial G1,G3,G2
62.	6/10/15	Minimization of completely specified machines
63.	7/10/15	Minimization of incompletely specified machines
64.	9/10/15	Partition Techniques
65.	10/10/15	Merger chart method
66.	6/10/15,7/10/15,9/10/15	Tutorial G1,G3,G2
67.	13/10/15	Concept of minimal cover table,ASM charts, Salient Features
68.	14/10/15	Simple examples
69.	16/10/15	System design using data path and control sub systems
70.	17/10/15	Weighing machine, Binary Multiplier
71.	13/10/15,14/9/15,16/10//15	Tutorial G1,G3,G2

TEXT BOOKS:

1. Switching and Finite Automata Theory- Zvi Kohavi & Niraj K. Jha, 3rd Edition, Cambridge.
2. Digital Design- Morris Mano, PHI, 3rd Edition.

REFERENCE BOOKS:

1. Introduction to Switching Theory and Logic Design – Fredriac J. Hill, Gerald R. Peterson, 3rd Ed,John Wiley & Sons Inc.
2. Digital Fundamentals – A Systems Approach – Thomas L. Floyd, Pearson, 2013.
3. Digital Logic Design - Ye Brian and HoldsWorth, Elsevier
4. Fundamentals of Logic Design- Charles H. Roth, Cengage LEarning, 5th, Edition, 2004.

Name : B. Jyothsna

Signature of the faculty with date:

HoD Signature: