

Bhoj Reddy Engineering College for Women: Hyderabad
Department of Electronics and Communication Engineering
Lesson plan of faculty member for the academic year 2017–18

Class: II B Tech

Branch-Section: ECE-C

Semester: II

Subject: Pulse and Digital Circuits (PDC)

Lectures per week: 5

Lecture Number	Topics to be covered	Date (s)
UNIT – I: Linear Wave Shaping		
1	Introduction to subject and applications.	18 December 2017
2	Response of high pass RC circuit for sinusoidal i/p with a problem.	20 December 2017
3	Response of high pass RC circuit for step i/p with a problem.	21 December 2017
4	Response of high pass RC circuit for ramp i/p with a problem.	22 December 2017
5	Response of high pass RC circuit for square i/p with a problem.	23 December 2017
6	Response of low pass RC circuit for sinusoidal i/p with a problem.	27 December 2017
7	Response of low pass RC circuit for step.	28 December 2017
8	Response of low pass RC circuit for square i/p with a problem.	29 December 2017
9	Tilt and rise time calculations	30 December 2017
10	Response of low pass RC circuit for ramp i/p with a problem	03 January 2018
11	RC network as differentiator & integrator	04 January 2018
12	RL & RLC circuits and their responses for step i/p	05 January 2018
13	Ringing circuit and problems	06 January 2018
14	problems	08 January 2018
UNIT-II: Non Linear Wave Shaping		
15	Introduction to non-linear wave shaping	09 January 2018
16	Diode clippers (series and shunt with positive and negative reference voltage)	10 January 2018
17	Transfer characteristics of clippers	11 January 2018
18	Two level clipper with different reference voltages	12 January 2018
19	Transistor clippers and Clipping at two independent levels	13 January 2018
20	Comparators and applications of voltage comparators	17 January 2018
21	Diode as clampers with positive and negative reference voltage	18 January 2018
22	Practical clamping circuits and clamping circuit taking source and diode resistance into account	19 January 2018
23	Clamping circuit theorem	20 January 2018
24	Effects of diode characteristics on clamping voltage	22 January 2018
25	Synchronized clamping	24 January 2018
26	Design problems.	25 January 2018
UNIT-III: Switching Characteristics of Devices:		
27	Diode as switch and piecewise linear characteristics of diode	27 January 2018
28	Diode switching times	29 January 2018
29	Transistor as a switch	31 January 2018
30	Breakdown characteristics of transistor.	01 February 2018
31	Temperature variation of Saturation Parameters	02 February 2018
32	Transistor switching times and silicon controlled switch circuits.	03 February 2018
UNIT-IV: Multivibrator and Time Base Generators		
33	Introduction to Multivibrators.	05 February 2018
34	Analysis and design of Bistable Multivibrators with fixed bias	10 February 2018
35	Analysis and design of Bistable Multivibrators with self-bias	12 February 2018
36	Commutating capacitors or Speed up capacitors	14 February 2018
37	Problems on bistable Multivibrator	15 February 2018
38	Analysis and design of Monostable Multivibrators	16 February 2018
39	Pulse width derivation and problems	17 February 2018

40	Analysis and design of Astable Multivibrators	19 February 2018
41	Pulse width derivation and problems	21 February 2018
42	Schmitt trigger circuit using transistor	22 February 2018
43	Introduction to time base generators and General features of time base signal	23 February 2018
44	Relationship between errors	26 February 2018
45	Different methods of generating time base signal	28 February 2018
46	Transistor Miller time base generator	02 March 2018
47	Transistor Bootstrap time base generator	03 March 2018
48	Transistor Current time base generators	05 March 2018
49	Methods of linearity improvement	07 March 2018
50	problems	08 March 2018
UNIT-V: Sampling Gates and Realization of Logic Gates Using Diodes & Transistors		
51	Introduction to sampling gates and its basic operation	09 March 2018
52	Unidirectional sampling gates	10 March 2018
53	Bidirectional sampling gates	12 March 2018
54	Reduction of pedestal in gate circuits	14 March 2018
55	four diode sampling gates	15 March 2018
56	Applications of sampling gates	16 March 2018
57	Introduction to logic gates using diodes & transistors	17 March 2018
58	AND,OR gates using diodes	19 March 2018
59	AND,OR gates using Transistor logic	21 March 2018
60	NOT, NAND and NOR gates using diodes	22 March 2018
61	NOT, NAND and NOR gates using transistors	23 March 2018
62	Totem pole Nand gate	24 March 2018
63	DCTL and RTL Logic families	28 March 2018
64	DTL and TTL Logic families	29 March 2018
65	CML Logic families	31 March 2018
66	Comparisons of Logic families	02 April 2018

TEXT BOOKS:

- T1:** Pulse, Digital and Switching Waveforms - J. Millman and H. Taub, McGraw-Hill, 1991.
T2: Solid State Pulse circuits - David A. Bell, PHI, and 4th Edn. 2002.

REFERENCES:

- R1.** Pulse and Digital Circuits – A. Anand Kumar, PHI, 2005.
R2. Wave Generation and Shaping - L. Strauss.
R3. Pulse, Digital Circuits and Computer Fundamentals - R.Venkataraman.

Name and signature of the faculty: A Navila -- --

Name and signature of Head of the Department: N Shribala -- --