

NETWORK THEORY
B.Tech. II Year I Sem

SAMSKRUTI COLLEGE OF ENGINEERING AND TECHNOLOGY
LESSON PLAN
NETWORK THEORY
(II Year B.Tech. EEE I SEM)

Sl. No.	Name of the Topic	No. of Classes required	Cumulative No. of periods	Teaching Aid
UNIT – I : Magnetic Circuits, Network topology				
1.	Faraday's laws of electromagnetic induction – concept of self and mutual inductance	02	02	Chalk & Talk
2.	dot convention – coefficient of coupling	02	04	Chalk & Talk
3.	composite magnetic circuit	02	06	Chalk & Talk
4.	Analysis of series and parallel magnetic circuits	02	08	Chalk & Talk
5.	Network topology: Definitions– Graph – Tree,	02	10	Chalk & Talk
6.	Basic cutset and matrices for planar networks	02	12	Chalk & Talk
7.	Basic Tieset and matrices for planar networks	02	14	Chalk & Talk
8	Loop and Nodal methods of analysis of Networks with dependent voltage and current sources	02	16	Chalk & Talk
9.	Duality & Dual networks.	02	18	Chalk & Talk
UNIT – II: Three phase circuits				
10.	Phase sequence – Star and delta connection	02	20	Chalk & Talk
11.	Relation between line and phase voltages and currents in balanced systems –	03	23	Chalk & Talk
12	Analysis of balanced and Unbalanced 3 phase circuits – Measurement of active and reactive power	02	25	
UNIT – III : Transient Analysis				
13	Transient response of R-L, R-C, R-L-C circuits (Series and Parallel combinations) for D.C excitations – Initial conditions – Classical method	02	27	Chalk & Talk
14	Transient response of R-L, R-C, R-L-C circuits (Series and Parallel combinations) for sinusoidal excitations – Initial conditions – Classical method	02	29	
15	Classical method and Laplace transforms methods of solutions.	02	31	Chalk & Talk
16	Transient response of the above circuits for different inputs such as step, ramp	03	34	
17	Transient response of the above circuits for	02	36	Chalk & Talk

	different inputs such as pulse and impulse by using Laplace transforms method			
UNIT – IV : Network Parameters				
18	Network functions driving point and transfer impedance function networks	01	37	Chalk & Talk
19	poles and zeros –necessary conditions for driving point function and for transfer function	02	39	Chalk & Talk
20	Two port network parameters – Z, and their relations	02	41	Chalk & Talk
21	Two port network parameters – Y, and their relations	02	43	Chalk & Talk
22	Two port network parameters – ABCD, and their relations	02	45	Chalk & Talk
23	Two port network parameters – hybrid, and their relations	02	47	Chalk & Talk
24	2-port network parameters using transformed variables.	02	49	Chalk & Talk
UNIT – V:Filters				
25	Introduction to filters –low pass – high pass and band pass	02	51	Chalk & Talk
26	RC, RL, filters	02	53	Chalk & Talk
27	Constant K and m derived filters	02	55	Chalk & Talk
28	composite filter design	02	57	Chalk & Talk

Total no of classes: 57