

<b>RAJASTHAN TECHNICAL UNIVERSITY, KOTA</b>	
<b>Lecture Plan</b>	
Session:	2015-2016
Semester:	B.Tech III Sem
Name of Faculty:	S.K.Sharma
Department:	Electrical Engg.
Course Name and Number:	Circuit Analysis-I
Name of Subject (with code):	Circuit Analysis-I (3EE2A)
Batch Name/Discipline:	Electrical Engg.

<b>Lecture Plan Details</b>		
<b>Lecture No.</b>	<b>Topic to be covered</b>	<b>Remark</b>
L-1	Introduction	
L-2	Circuit elements and their characteristics	
L-3	Current and voltage reference. Response of single element	
L-4	Response of double element and triple element circuits.	
L-5 and L-6	Resonance circuit	
L-7	Selectivity & Q-factor in AC circuits.	
L-8	Network voltages-Mesh & node systems of network equations and their comparison.	
L-9	Introduction to Graph theory	
L-10	Tree, incidence matrix	
L-11	Fundamental circuit functions, Tie- set matrix	
L-12	f-circuits analysis and f-cut set analysis	
L-13	Node and node pair analysis	
L-14	Duality, Method of obtaining dual network	
L-15	Thevenis's theorem and Norton's theorem	
L-16	Superposition theorem and Reciprocity theorem	
L-17	Compensation theorem and Millman's theorem	

L-18	Tellegen's theorem and Miller's theorems	
L-19	Maximum power transfer theorem	
L-20	General Circuit Relations ,Three Phase Star, Three Phase Delta, Star and Delta Combination	
L-21	Four Wire Star Connection	
L-22	Balanced and unbalanced-three Phase Voltages, currents and impedances	
L-23	Power and reactive volt-amperes in a three phase system	
L-24	Instantaneous Power in AC Circuits, Power Factor	
L-25	Apparent Power, Reactive Power	
L-26	Power Triangle, Complex Power	
L-27 and L-28	Complex Periodic Waves and Their Analysis By Fourier Series	
L-29	Different Kinds of Symmetry	
L-30	Determination of Co-efficients	
L-31	Average and Effective Values of a Non-Sinusoidal Wave	
L-32	Power in a Circuit of Non-Sinusoidal Waves of Current and Voltage	
L-33	Form Factor, Equivalent Sinusoidal Wave and Equivalent Power Factor	
L-34	Response of Linear Network to Non-Sinusoidal Periodic Waves	
L-35 and L-36	Response of networks to step, ramp, impulse pulse and sinusoidal inputs	
L-37	Time domain and frequency domain analysis of circuits	

L-38	Shifting theorem	
L-39	Initial and final value theorem	
L-40	Special signal waveforms with Laplace transform	
L-41	Applications to circuit operations	