Name of Faculty : Rajesh Kumar

Class : 3rd sem

Branch : Electronics & Comm Engg

Subject : NFTL

Lesson Plan Duration : 15Weeks

Work Load (Lecture /Practical) per week in hours : Lecture : 3 Practical : 2

Week	Theory		Practical	
	Lecture Day	Topic (including assignment/test)	Practical week	Topic
1st	1st	Review of concept of voltage, current. Introduction to resistance, inductor and capacitor	1st	Introduction and Use of Multimeter, CRO, etc for measuring the current, voltage and resistance
	2nd	Series and parallel combination of impedances		
	3rd	Current and voltage divider rules		
2nd	1st	Introduction to Two port network, Network elements and types of two port networks	2nd	To measure the characteristic impedance of symmetrical T and Л networks
	2nd	Symmetrical and asymmetrical networks: Balanced and unbalanced network		
	3rd	T-network, Л network, Ladder network; Lattice network		
3rd	1st	L-network and Bridge T-network	3rd	To measure the image impedance of a given asymmetrical T and Л networks
	2nd	Concept and significance of iterative impedance, image impedance		
	3rd	Image transfer constant and insertion loss		
4th	1st	Concept and significance of the terms characteristic impedance, propagation constant	4th	Practical file checking
	2nd	attenuation constant, phase shift constant		
	3rd	insertion loss of T-network and Л Network		
5th	1st	The half section (L-section); symmetrical T and Л sections into half sections	5th	To design and measure the attenuation of a symmetrical T/ Л type attenuator
	2nd	Test and assignment (Unit1)		
	3rd	Units of attenuation (Decibels and Nepers): General characteristics of attenuators		

6th	1st	Analysis and design of Symmetrical T type attenuator	6th	Viva- Voce and practical file checking
	2nd	Analysis and design of Symmetrical Л type, L type attenuator		
	3rd	Test and assignment **(Unit 2)**		
7th	1st	Introduction to Electrical Filters, concept of low pass, high pass, band pass and band stop filters.	7th	For a prototype low pass filter:a) Determine the characteristic impedance experimentallyb) Plot the attenuation characteristic
	2nd	Brief idea of the use of filter networks in different communication systems,		
	3rd	Prototype Filter Section: Basic Filter Equation for calculation of Pass Band, Stop Band and Cut off frequency		
8th	1st	Impedance characteristics vs frequency characteristics of a prototype low pass filter and their significance	8th	For a prototype high pass filter: a) Determine the characteristic impedance experimentally b) To plot the attenuation characteristic
	2nd	Impedance characteristics vs frequency characteristics of a prototype high pass filter and their significance		
	3rd	Attenuation Vs frequency; Phase shift Vs frequency, characteristics impedance vs frequency of T and Л filters and their significance		
9th	1st	M-Derived Filter Sections: Limitation of prototype filters, need of m-derived filters	9th	a) To plot the Impedance characteristic of a prototype band-pass filter b) To plot the attenuation characteristic of a prototype band pass filter
	2nd	M derived low pass filter		
	3rd	M derived low pass filter		
10th	1st	Crystal Filters: Crystal and its equivalent circuits, special properties of piezoelectric filters and their use	10th	Viva- Voce
	2nd	Active Filters Basic concept of active filters, Low pass Active filter		
	3rd	High pass active filter and comparison of active filters with passive filters.		
11th	1st	Test and assignment **(Unit 3)**	11th	a) To plot the impedance characteristic of m- derived low pass filter b) To plot the attenuation characteristics of m-derived high pass filter
	2nd	Transmission Lines, their types and applications		
	3rd	Distributed constants, T and Л representation of transmission line section		
12th	1st	Transmission line equation, expression for voltage, current	12th	To observe the information of standing waves on a transmission line and
	2nd	Impedance at a point on the line.		

	3rd	Definition of characteristic impedance, propagation constant, attenuation constant andphase shift constant		measurement of SWR and characteristic impedance of the line
13th	1st	Concept of infinite line	13th	Draw the attenuation characteristics of a crystal filter
	2nd	Condition for minimum distortion and minimum attenuation of signal on-the-line		
	3rd	Introduction to loading methods.		
14th	1st	Concept of reflection and standing waves, definition of reflection coefficient	14th	Practical file checking
	2nd	SWR & VSWR and their relation		
	3rd	Concept of transmission lines at high frequencies		
15th	1st	Introduction to stubs. (single, open and short stubs)	15th	viva-voce
	2nd	Revision of Unit 4		
	3rd	Test and assignment (Unit 4)		