Lesson Plan

Name of Faculty : POONAM, Assistant Professor
Discipline : ECE
Semester : Vth
Subject : MICROWAVE ENGINEERING ((PCC-ECE301-T))
Lesson Plan Duration: 15 weeks
Work Load (Lectutre/Practical) per week (in hours):Lectures-04, Practical -01

Week	Theory		Practicals	
	Lecture Day	Topic (Including Assignment/Test)	Practical Day	Topic
1st	1	Introduction, comparison with transmission lines	1	Study of wave guide components.
	2	Propagation in TEmode		
	3	Propagation in TM Mode, Rectangular wave guide		
2nd	4	TEM mode in rectangular wave guide	2	To study the characteristics of reflex Klystron and determine its timing range.
	5	Characteristic Impedance		
	6	Introduction to circular waveguides, Introduction to planar transmission lines		
3rd	7	Directionalcouplers	3	To measure frequency of microwave source and demonstrate relationship amongguide dimensions, free space wave length and guide wavelength
	8	Tees		
	9	Hybrid ring, S-Parameters		
4th	10	Attenuators	4	To measure VSWR of unknown load and determine its impedance using a smith chart
	11	Cavity Resonators		
	12	Mixers & Detectors ,Matched Load		
5th	13	Wave meter	5	To match impedance for maximum power transfer using slide screw tuner.
	14	PhaseShifter		
	15	Ferrite devices: Isolators Circulators		
6th	16	Limitation of conventional tubes	6	**First Viva -Voce**
	17	Construction of Klystron amplifier, Operation and properties of Klystron amplifier		
	18	Assignment I		
7th		**……Ist Minor Test……..**		
8th	19	Reflex Klystron	7	To measure coupling and directivityofdirectioncouplers.
	20	Magnetron		
	21	TWT, BWO, Crossed field amplifiers		
9th	22	Varactor diode	8	Tomeasureinsertionloss,isolation of a three port circulator.
	23	Tunnel diode		
	24	Schottky diode, GUNN diode		
10th	25	IMPATT diode	9	To measure the Q ofa resonant cavity.
	26	TRAPATT diode		
	27	PIN diodes MASER		
11th	28	Parametric amplifiers	10	To study the V-I characteristics of GUNN diode.
	29	Effect of Microwaves on human body		
	30	Medical and Civil applications of microwaves, ,		
12th	31	Electromagnetic interference	11	Tomeasure VSWR, insertion losses and attenuation of a fixed and variable attenuator.
	32	Electromagnetic Compatibility (EMI / EMC),		
	33	Monolithic Microwave IC fabrication		
13th	34	RF MEMS for microwave components	12	**Second Viva Voce**
	35	Microwave Imaging		
	36	microwave propagation		
14th		**……IInd Minor Test……..**		
15th	37	Microwave Antennas		
	38	Assignment-2		
	39	Problem solving		