

Lesson Plan

Name of Faculty : Dr. Suman Rani, Assistant Professor

Discipline: ECE

Semester: 7th

Subject : ANTENNA & WAVE PROPAGATION (PEC-ECE409-T)

Lesson Plan Duration: 14 weeks

Work Load (Lecture/Practical) per week (in hours): Lectures-03

Week	Theory		Actual Covered	Signature
	Lecture Day	Topic (Including Assignment/Test)		
1 st	1	RADIATION OF ELECTROMAGNETIC WAVES: Short Electric Dipoles, Retarded potential,		
	2	Radiation from a Small Current Element, field of short dipole,		
	3	Power Radiated by a Current Element and Its Radiation Resistance,		
2 nd	4	Linear antenna, half wave dipole,		
	5	Radiation from a Half Wave Dipole, Antenna impedance,		
	6	Effect of ground on antenna pattern, Input impedance, Mutual Impedance.		
3 rd	7	ANTENNA PARAMETERS: Antenna Pattern, Antenna Parameters: Front to Back Ratio,		
	8	Gain, Directivity, Radiation Resistance,		
	9	Radiation Patterns, Radiation Power Density,		
4 th	10	Radiation Intensity Efficiency		
	11	Effective Length and Beam width		
	12	Reciprocity Theorem for Antenna and Its Applications.		
5 th	13	Aperture Area, Impedance		
	14	ANTENNA ARRAYS AND TYPES OF ANTENNAS: Types of Antenna Array: Broadside Array, End Fire Array		
	15	Collinear Array and Parasitic Array, Two element array		
6 th	16	array of point sources, pattern multiplication, Linear Array		
	17	Phased Array, Tapering of Arrays, Binomials Arrays, Isotropic Antenna ,YagiUda		
	18	Microwave antenna, parabolic feeds, conical, helix, log periodic, horn		
7 th		Microstrip Antenna and Patch Antenna,		
8 th	19	RUMSEY'S Principle,		
	20	Frequency independent conical spiral Antenna.		
	21	PROPAGATION: Modes of Propagation		
9 th	22	Space wave and Surface Wave		
	23	Reflection and refraction of waves by the ionosphere		
	24	Tropospheric Wave propagation,		
10 th	25	Virtual Height,		
	26	bending mechanism of waves by ionosphere		
	27	Frequency independent planar log spiral antenna		
11 th	28	Frequency independent concept		
	29	MUF, Critical frequency,		
	30	Skip Distance, Duct Propagation,		
12 th	31	Space wave		
	32	Revision of Unit-1		
	33	Revision of Unit-2		
13 th	34	Revision of Unit-3		
	35	Revision of Unit-3		
	36	MCQ Based on unit1		
14 th	37	MCQ Based on unit 2		
	38	MCQ Based on unit 3		
	39	MCQ Based on unit 4		