

STATE INSTITUTE OF ENGINEERING & TECHNOLOGY
Department of Electronics & Communication Engineering

LESSON PLAN

Subject Name: - Antennas & Propagation
Year: - 3rd

Subject Code: - B24-ECE-307
Semester: - 5th

Lecture No	Unit No	Topic	COs Covered
1.	UNIT-I	Physical concept of radiation	CO1
2.		Retarded potential	
3.		Radiation pattern, near- and far- field regions	
4.		Radiation Resistance Gain, Directive Gain, Power Gain	
5.		Directivity, Efficiency, Beam width, Effective Height	
6.		Effective Aperture, Bandwidth and Antenna Temperature	
7.		Radiation from Hertzian Dipole	
8.		Short Dipole	
9.		Monopole Antenna, Folded Dipole Antenna	
10.		Half Wave Dipole	
11.		Test	
12.	UNIT-II	Uniform Linear Arrays - Broadside Arrays	CO2
13.		End fire Arrays	
14.		Analysis of arrays of 2 Isotropic Sources - Different Cases	
15.		Binomial Array, Chebyshev Array	CO3
16.		Turnstile Antennas	
17.		Yagi-Uda antennas	
18.		Loop Antenna (Rectangular & Circular)	
19.		Helical Antenna	
20.		Biconical Antenna.	
21.		Test	
22.	UNIT-III	Radiation from Rectangular Apertures, Uniform and Tapered Aperture	CO3
23.		Horn antenna, Reflector Antenna	
24.		Cassegrain and Gregorian Feeding Structures	
25.		Rectangular Slot Antenna	
26.		Basic configurations of patch antennas	
27.		Method to Analyze Patch antenna	

28.		Transmission Line Model	
29.		Rumsey's principle	
30.		Frequency Independent Planar Log Spiral Antenna	
31.	UNIT-IV	Introduction, Ground Wave Propagation	CO4
32.		Sky Wave Propagation: Virtual Height, Critical Frequency	
33.		Maximum Usable Frequency (MUF) – Skip Distance	
34.		Fading	
35.		Duct Propagation	
36.		Troposcatter Propagation	
37.		Flat Earth and Curved Earth Concept.	
38.		Space Wave Propagation	
39.		Multi Hop Propagation	
40.		Revision	

Text Books:

1. J. D. Kraus, Antennas, McGraw Hill, 1988.
2. C.A. Balanis, Antenna Theory - Analysis and Design, John Wiley, 1982.

References:

3. Antenna & Wave Propagation- K.D. Prasad, Satya Parkashan.
3. R.E. Collin, Antennas and Radio Wave Propagation, McGraw Hill, 1985.
4. I.J. Bahl and P. Bhartia, Micro Strip Antennas, Artech House, 1980.
6. A.R.Harish, M.Sachidananda, Antenna and Wave Propagation, Oxford University Press.