



Course: M.Tech. (Electronics & Communication Engineering)	Name of Faculty: Dr. Deepti Das Krishna
Topic: 20-437-0113 ANTENNA THEORY	Semester: FIRST
Lecture Hall: MTech 1 st (Electronics & Communication)	Timings: as per CBCS, Slot E

<i>Week and date</i>	<i>Lecture topics</i>	<i>Assignments</i>	<i>Remarks</i>
Week 1	Module 1: Solution of Maxwell's Equations for Radiation Problems, The Ideal Dipole, Radiation Patterns		1
Week 2	Module 1: Directivity and Gain, Antenna Impedance, Radiation Efficiency		1
Week 3	Module 1: Antenna Polarization, Receiving Properties of Antennas		1
Week 4	Module 1: Antenna measurement- Principle, Ranges, Antenna Parameters, Mobile Radio Antenna Measurement.	Assignment-1	1
Week 5	Module 2: Electrically Small Dipoles, Half-Wave Dipoles, Monopoles and Image Theory		2
Week 6	Module 2: Small Loop Antennas and Duality; Types of Dipole Antennas, Yagi-Uda Antennas	Assignment-1 submission	2
Week 7	Module 2: Feeding & Loading Wire Antennas, Ground Effects on Wire Antennas		2
Week 8	Module 3: <i>Linear Arrays</i> - Array Factor, Pattern Multiplication, Uniform and Non-uniform Excitation, Mutual Coupling		3
Week 9	Module 3: , Phased Arrays and Array Feeding Techniques; <i>Array Synthesis</i> - Line Source and Linear Array Shaped Beam Synthesis Methods		3
Week 10	Module 3: Low Side Lobe and Narrow Main Beam Synthesis Methods.		3
First Internals			
Week 11	Module 4: <i>Broadband Antennas</i> - Helical, Bi-conical, Sleeve, Frequency Independent Antennas	Assignment-2	4
Week 12	Module 4: <i>Aperture Antennas</i> - Rectangular & Circular Apertures, Rectangular Horn Antennas		4

Week 13	Module 4: Reflector Antennas, Feed Antennas for Reflectors	Assignment-2 submission	4
Week 14	Module 5: Microstrip Antenna Elements, Microstrip Leaky Wave Antennas, Fundamental Limits on Antenna Size, Antennas for Compact Devices, Human Body Effects on Antenna Performance,		5
Week 15	Module 5: Radiation Hazards, Satellite Terminal Antennas, Base Station Antennas, Mobile Terminal Antennas, Smart Antennas, Adaptive and Spatial Filtering Antennas		5
Second Internals			
Week 16	Module 5: <i>CEM for Antennas</i> : General Introduction to CEM & Comparison of the Different Methods.	Publication of Sessional	5