Department of Electronics & Telecommunication Engineering

LESSON PLAN FOR 5TH SEMESTER, ETC.

SUBJECT- WAVE PROPAGATION(TH-04)

NAME OF THE FACULTY- JASMINE NESSA

SL NO	MONTH	DATE	CH NO	SL NO	NO. OF PERIODS REQUIRED AS PER SYLLABUS	NO OF PERIODS AVAILABLE AS PER PLAN
1	SEP		1	Unit-1: WAVE PROPAGATION & ANTENNA	12	12
2		15/09/22		1.1 Effects of environments such as reflection, refraction, interference, diffraction, absorption and attenuation (Definition only)		
3		16/09/22		1.2 Classification based on Modes of Propagation-Ground wave, Ionosphere ,Sky wave propagation, Space wave propagation		
4		19/09/22		1.3 Definition – critical frequency, max. useable frequency, skip distance, fading, Duct propagation & Troposphere scatter propagation actual height and virtual height		
5		21/09/22		1.4 Radiation mechanism of an antenna-Maxwell equation.		
6		22/09/22 23/09/22		1.5 Definition - Antenna gains, Directive gain, Directivity, effective aperture, polarization, input impedance, efficiency, Radiator resistance, Bandwidth, Beam width, Radiation pattern		
7		24/09/22 26/09/22		1.6 Antenna -types of antenna: Mono pole and dipole antenna and omni directional antenna		
8		28/09/22 29/09/22 30/09/22		1.7 Operation of following antenna with advantage & applications. a) Directional high frequency antenna : , Yagi & Rohmbus only b) UHF &Microwave antenna.: Dish antenna (with parabolic reflector) & Horn antenna		
9		01/10/22 10/10/22		1.8 Basic Concepts of Smart Antennas-Concept and benefits of smart antennas		

10	OCT	12/10/2022	2	Unit-2: TRANSMISSION LINES.	10	10
11				2.1 Fundamentals of transmission line.		
12		13/10/22		2.2 Equivalent circuit of transmission line & RF equivalent circuit		
13		14/10/22		2.3 Characteristics impedance, methods of calculations & simple numerical		
14		15/10/22		2.4 Losses in transmission line.		
15		17/10/22 19/10/22 20/10/22		2.5 Standing wave – SWR, VSWR, Reflection coefficient, simple numerical.		
16		21/10/22 22/10/22		2.6 Quarter wave & half wavelength line		
17		26/10/22		2.7 Impedance matching & Stubs – single & double		
18		27/10/22		2.8 Primary & secondary constant of X-mission line		
19		28/10/22 29/10/22	3	Unit-3: TELEVISION ENGINEERING.	13	10
20				3.1 Define-Aspect ratio, Rectangular Switching. Flicker, Horizontal Resolution, Video bandwidth, Interlaced scanning, Composite video signal, Synchronization pulses		
21		31/10/22		3.2 TV Transmitter – Block diagram & function of each block.		
22		2/11/22 3/11/22		3.3 Monochrome TV Receiver -Block diagram & function of each block.		
23		4/11/2022		3.4 Colour TV signals (Luminance Signal & Chrominance Signal,(I & Q,U & V Signals).		
24		5/11/22 7/11/22 9/11/22 10/11/22		3.5 Types of Televisions by Technology- cathode-ray tube TVs, Plasma Display Panels, Digital Light Processing (DLP),Liquid Crystal Display (LCD),Organic Light-Emitting Diode (OLED) Display, Quantum Light-Emitting Diode (QLED) – only Comparison based on application		
25		11/11/22 12/11/22		3.6 Discuss the principle of operation - LCD display, Large Screen Display.		
26		14/11/22		3.7 CATV systems & Types & networks		

27	NOV	17/11/22		3.8 Digital TV Technology-Digital TV Signals, Transmission of digital TV signals & Digital TV receiver Video programme processor unit.		
28						
29				Unit-4: MICROWAVE ENGINEERING.		
30		18/11/22		4.1 Define Microwave Wave Guides		
31		19/11/22		4.2 Operation of rectangular wave gives and its advantage.		
32		21/11/22		4.3 Propagation of EM wave through wave guide with TE & TM modes		
33		23/11/22		4.4 Circular wave guide.		
34		24/11/22		4.5 Operational Cavity resonator.		
35		25/11/22 26/11/22	4	4.6 Working of Directional coupler, Isolators & Circulator.	15	12
36		28/11/22		4.7 Microwave tubes-Principle of operational of two Cavity Klystron		
37		30/11/22		4.8 Principle of Operations of Travelling Wave Tubes		
38		1/12/2022		4.9 Principle of Operations of Cyclotron		
39		2/12/22 3/12/22		4.10 Principle of Operations of Tunnel Diode & Gunn diode		
40				Unit-5: Broadband communication		
41		5/12/2022		5.1 Broadband communication system-Fundamental of Components and Network architecture		
42	DEC	7/12/22 8/12/22		5.2 Cable broadband data network-architecture, importance & future of broadband telecommunication internet based network		
43		9/12/22 10/12/22	5	5.3 SONET(Synchronous Optical Network)-Signal frame components topologies advantages applications, and disadvantages	10	8
44		12/12/22 14/12/22 15/12/22		5.4 ISDN - ISDN Devices interfaces, services, Architecture, applications,		
45		16/12/22 17/12/22 19/12/22		5.5 BISDN -interfaces & Terminals, protocol architecture applications		
46		21/12/22		REVISION		
47		22/12/22		REVISION		

S.NO	MONTH	CHAPTERS TO BE COMPLETED	% COMPLETED
1	SEP	CH 1.7	20%
2	OCT	CH 1.8 CH 2 CH 3.2	30%
3	NOV	CH 3.3-3.8 CH 4.1-4.8	30%
4	DEC	CH 5	20%

Teresa 13/09/22
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