

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline	Semester <u>5th</u>	Name of the Teaching Faculty
Subject <u>Th-4 wave propagation</u>	No. of days per Week Class Alloted - <u>4 (four)</u>	Semester from Dt. <u>4/10/2021</u> To Dt. <u>07/10/2022</u> No. of Weeks: <u>14 (fourteen)</u>
Week	Class Day	Theory / Practical Topics

1st (October)	1st Day	Effects of environments such as reflection, refraction, interference.
	2nd	Diffraction; absorption and attenuation.
	3rd	Classification based on Modes of Propagation - Ground wave
	4th	Ionosphere, Sky wave propagation, Space wave propagation
	5th	Definition - critical frequency, max, useable frequency
2nd	0	
3rd	1st	Skip distance, fading, Duct propagation & Troposphere scatter propagation actual height and virtual height
	2nd	Radiation mechanism of an antenna - Maxwell equation.
	3rd	Definition - Antenna gains, Directive gain, Directivity, effective aperture, polarization.
4th	1st	Input impedance, efficiency, Radiator resistance,
	2nd	Bandwidth, Beam width, Radiation pattern.
	3rd	Antenna - types of antenna: Mono pole and dipole antenna
	4th	omni-directional antenna, Directional high frequency Yagi antenna.
	5th	Directional high frequency antenna - Rhombus antenna.
5th	1st	UHF & Microwave antenna: Dish antenna.
November	2nd	UHF & Microwave antenna: Horn antenna.
	3rd	Basic Concepts of Smart Antennas:- Concept and benefits of smart antennas.
	4th	Fundamentals of transmission line.
	5th	Equivalent circuit of transmission line & RF equivalent ckt.
6th	1st	Characteristics impedance, methods of calculations & simple, numerical
	2nd	Losses in transmission line.
	3rd	standing wave - SWR, VSWR, Reflection co-efficient
	4th	Quarter wave & half wavelength line.
	5th	Impedance matching & stubs - single & double
7th	1st	Primary & Secondary constant of X-mission line.
	2nd	Television Engg. Aspect ratio, Rectangular waveguiding

Sig. of Faculty

Sig. of H.O.D/ Academic Bureau
H.O.D. Electronics & Telecomm. Engg
Dr. Athgarh

Sig. of Principal

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DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY	SUBJECT
	5th		wave propagation
MONTH	WEEK / DAY	THEORY / PRACTICAL TOPIC	
7th (NOV)	3rd	Ed. Flicker, Horizontal Resolution, video bandwidth	
	7th	TV Transmitter - Block diagram & function of each block	
8th	1st	Monochrome TV Receiver - Block diagram & function of each block	
	2nd	Colour TV signals (Luminance & Chrominance signal)	
	3rd	Types of Televisions by Technology - cathode ray tube	
	4th	Plasma Display Panels, Digital light processing, Organic Light-Emitting Diode, Quantum light-emitting Diode.	
9th	1st	Discuss the principle of operation LCD display	
(December)	2nd	Discuss the principle large screen Display.	
	3rd	CATV systems & Types & networks.	
	4th	Digital TV Technology - Digital TV signals,	
	5th	Transmission of digital TV signals & Digital TV receiver video programme processor unit.	
10th	1st	Define Microwave wave Guides.	
	2nd	operation of rectangular wave guides and its adv.	
	3rd	Propagation of EM wave through wave guide	
	4th	wave guide with TE & TM modes	
	5th	Circular wave guide.	
11th	1st	Operational Cavity resonator.	
	2nd	working of Directional coupler, Isolators.	
	3rd	working of Circulator.	
	4th	Principle of operation of two cavity klystron	
	5th	Principle of operation of Travelling wave Tubes	
12th	1st	Principle of operation of Cyclotron.	
	2nd	Principle of operation of Tunnel Diode & Gunn Diode.	
	3rd	Broadband communication system - fundamental	
	4th	of components and Network architecture.	
	5th	Coaxial cable broadband data network	

Sig. of Faculty

Sig. of H.O.D. Academic Bursar
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DIP Athgarh

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	5th		wave propagation
MONTH	WEEK / DAY	THEORY / PRACTICAL TOPIC	
13th (December)	1st	architecture, importance & future of broadband telecommunication.	
	2nd	Internet based network.	
	3rd	SONET (Synchronous Optical Network)	
	4th	Signal frame components topologies	
	5th	SONET advantage applications & disadvantages.	
14th (January)	1st	ISDN Devices interfaces.	
	2nd	ISDN Devices services and applications.	
	3rd	BISDN Interfaces & Terminals.	
	4th	Protocol architecture applications	
	5th	Terminals & Protocol of BISDN.	

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