

**PNS SCHOOL SCHOOL OF ENGINEERING AND TECHNOLOGY, NISHAMANI VIHAR, KENDRAPARA
LESSON PLAN**

BRANCH - Electronics And Telecommunication	SEMESTER - 5TH	SEMESTER FROM DATE 15/09/2022	NAME OF THE TEACHING FACULTY: AMARENDRA SAHOO
	NO OF DAYS PER WEEK CLASS ALLOTTED - 4	TO 22/12/2022 WEEKS.....	SUBJECT - Th.4 WAVE PROPAGATION & BROADBAND COMMUNICATION ENGINEERING
UNIT	MONTH	DATE	THEORY
UNIT1	SEPTEMBER	16.09.22	Unit-1: WAVE PROPAGATION & ANTENNA Effects of environments such as reflection, refraction, interference, diffraction, absorption and attenuation (Definition only)
		19.09.22	Classification based on Modes of Propagation-Ground wave, Ionosphere, Sky wave propagation, Space wave propagation
		20.09.22	Definition – critical frequency, max. useable frequency, skip distance, fading, Duct propagation & Troposphere scatter propagation actual height and virtual height
		23.09.22	Radiation mechanism of an antenna-Maxwell equation
		24.09.22	Definition - Antenna gains, Directive gain, Directivity, effective aperture, polarization, input impedance, efficiency,
		26.09.22	Radiator resistance, Bandwidth, Beam width, Radiation pattern
		27.09.22	Antenna -types of antenna: Mono pole and dipole antenna and omni directional antenna
		30.09.22	Operation of following antenna with advantage & applications.
		10.10.22	Directional high frequency antenna : , Yagi & Rohmbus only
		11.10.22	UHF & Microwave antenna.: Dish antenna (with parabolic reflector) & Horn antenna Basic Concepts of Smart Antennas- Concept and benefits of smart antennas
		14.10.22	Unit-2: TRANSMISSION LINES. Fundamentals of transmission line.
		15.10.22	Equivalent circuit of transmission line & RF equivalent circuit
		18.10.22	Characteristics impedance, methods of calculations & simple numerical
		24.11.22	Losses in transmission line
UNIT-2	OCTOBER	25.10.22	Standing wave – SWR, VSWR, Reflection coefficient, simple numerical
		28.10.22	Quarter wave & half wavelength line
		29.10.22	Impedance matching & Stubs – single & double
		31.10.22	Primary & secondary constant of X-mission line.

UNIT-3	NOVEMBER	01.11.22	Unit-3: TELEVISION ENGINEERING. Define Microwave Wave Guides
		04.11.22	Operation of rectangular wave guides and its advantage
		05.11.22	Propagation of EM wave through wave guide with TE & TM Circular wave guide
		11.11.22	Operational Cavity resonator. Working of Directional coupler, Isolators & Circulator.
		12.11.22	Microwave tubes-Principle of operation of two Cavity Klystron
		14.11.22	Principle of Operations of Travelling Wave Tubes
		15.11.22	Principle of Operations of Cyclotron
		18.11.22	Principle of Operations of Tunnel Diode & Gunn diode
UNIT-4		19.11.22	Unit-4: MICROWAVE ENGINEERING. Define Microwave Wave Guides.
		21.11.22	Operation of rectangular wave guides and its advantage.
		22.11.22	Propagation of EM wave through wave guide with TE & TM modes
		25.11.22	Circular wave guide. Operational Cavity resonator
		26.11.22	Working of Directional coupler, Isolators & Circulator
		28.11.22	Microwave tubes-Principle of operation of two Cavity Klystron.
		29.11.22	Principle of Operations of Travelling Wave Tubes
		UNIT-5	02.12.22
03.12.22			Principle of Operations of Tunnel Diode & Gunn diode
05.12.22			Unit-5: Broadband communication Broadband communication system-Fundamental of Components and Network architecture
	06.12.22		Cable broadband data network- architecture, importance & future of broadband telecommunication
09.12.22	internet based network.		
10.12.22	SONET(Synchronous Optical Network)-Signal frame components topologies advantages applications and disadvantages		
12.12.22	ISDN - ISDN Devices interfaces, services		
13.12.22	Architecture, applications,		
16.12.22	BISDN -interfaces & Terminals, protocol architecture applications		
17.12.22	architecture applications		
19.12.22	REVISION OF CH.1,2,3		
20.12.22	REVISION OF CH.4,5		

Amarendna Sahu.

SIGNATURE OF LECTURER

Amarendna Sahu.

SIGNATURE OF HOD