

LESSON PLAN

Discipline:ETC	Semester:5 th	Name of the teaching Faculty: Amiya Ranjan Das
Subject: W.P&B.C.E.(TH-2) (ETCPC 303)	No.of days/week class Allotted: 03	Semester From: 01.07.2026 To: 05.11.2026
		No.of weeks:15
Week	Class/Day	Theory Topics
1 st	1 st	UNIT-1:WAVE PROPAGATION AN ANTENNA 1.1:Effect of environments such as reflection,refraction,interference ,diffraction,absorption and attenuation (Definition only).
	2 nd	1.2:Classification based on modes of propagation-Groundwave, iono sphere,sky wave propagation,space wave propagation.
	3 rd	1.3:Definition-Critical frequency,max-useable frequency,skip distance, fading,Duct propagation & Tropo sphere scatter propagation,actual height and virtual height. (contd.....)
2 nd	1 st	1.3:Definition-Critical frequency,max-useable frequency,skip distance, fading,Duct propagation & Tropo sphere scatter propagation,actual height and virtual height.
	2 nd	1.4:Radiation mechanism of an antenna-Max-well equation.
	3 rd	1.5:Definition-Antenna gains,Directive gain,Directivity,effective aperture polarization,input impedadance,efficiency, Radiator resistance, Band width,Beam width,Radiation pattern.(contd.....)
3 rd	1 st	1.5:Definition-Antenna gains,Directive gain,Directivity,effective aperture polarization,input impedadance,efficiency, Radiator resistance, Band width,Beam width,Radiation pattern .(contd.....)
	2 nd	1.5:Definition-Antenna gains,Directive gain,Directivity,effective aperture polarization,input impedadance,efficiency, Radiator resistance, Band width,Beam width,Radiation pattern.
	3 rd	1.6:Antena: Mono pole & dipole antenna & omni directional antenna.
4 th	1 st	1.7:Operation of the following antenna with advantages & applications. 1.7.1:Directional high frequency antenna:Yagi and Rombus only.
	2 nd	1.7.2:UHF & micro wave antenna:Dish antenna(with parabolic reflector)&Horn antenna.
	3 rd	1.8:Basic Concepts of Smart antennas-concept and benefits of smart antennas.
5 th	1 st	UNIT-2:TRANSMISSION LINES 2.1 :Fundamentals of transmission line.
	2 nd	2.2::Equivalent circuit of transmission line & RF equivalent circuit.
	3 rd	2.3:Characteristics impedance,methods of calculation,& simple numerical. (contd.....)
6 th	1 st	2.3:Characteristics impedance,methods of calculation ,& simple numerical.
	2 nd	2.4:Losses in transmission line.
	3 rd	2.5:Standing wave-SWR,VSWR Reflection coefficient,simple numerical.
7 th	1 st	UNIT-3:TELEVISION ENGINEERING 3.1:Define aspect ratio,Rectangular switching,flicker,horizontal resolution, video band width,interlaced scanning,composite video signal,synchronization pulses.(contd.....)

8th	2nd	3.1: Define aspect ratio, Rectangular switching, flicker, horizontal resolution, video band width, interlaced scanning, composite video signal, synchronization pulses.
	3rd	3.2: T.V Transmitter-Block diagram and function of each block.
	1st	3.3: Monochrome T.V receiver-block diagram and function of each block.
	2nd	3.4: Color T.V signals (Luminance signal & chrominance signal (I&Q, U&V Signal).
9th	3rd	3.5: Types of Televisions by technology (Concept only): 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). (contd.....)
	1st	3.5: Types of Televisions by technology (Concept only): 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). (contd.....)
	2nd	3.5: Types of Televisions by technology (Concept only): 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). (contd.....)
	3rd	3.6: Discuss the principle of operation LCD display, large screen Display.
10th	1st	3.7: Digital TV technology-Digital TV signals, Transmission of digital TV signal & Digital TV receiver, video programme processor unit.
	2nd	UNIT-4: MICROWAVE ENGINEERING
	3rd	4.1: Define microwave wave guides.
11th	1st	4.2: Operation of rectangular wave guides and its advantage.
	2nd	4.3: Propagation of EM wave through wave guide with TE & TM modes. (contd.....)
	3rd	4.3: Propagation of EM wave through wave guide with TE & TM modes.
12th	1st	4.4: Working of Directional coupler, Isolator and circulator.
	2nd	4.5: Micro wave tubes-principle of operation of two cavity klystron. (contd.....)
	3rd	4.5: Micro wave tubes-principle of operation of two cavity klystron.
13th	1st	4.6: Principle of operation of cyclotron.
	2nd	4.7: Principle of operation of Tunnel Diode and Gunn diode.
	3rd	UNIT-5: BROADBAND COMMUNICATION
14th	1st	5.1: Broad band communication system-Fundamentals of components And network-architecture. (contd.....)
	2nd	5.1: Broad band communication system-Fundamentals of components And network-architecture.
	3rd	5.2: Cable broad band data network-architecture, importance & future of broadband Telecommunication, internet based network. (contd.....)
15th	1st	5.2: Cable broad band data network-architecture, importance & future of broadband Telecommunication, internet based network.
	2nd	5.3: ISDN-ISDN Devices interfaces, services, Architecture, applications.
	3rd	5.3: ISDN-ISDN Devices interfaces, services, Architecture, applications. (contd.....)

Signature of faculty

Signature of sr. lecturer

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Signature of principal

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