Bhubanananda Orissa School of Engineering

Lesson Plan

Discipline: E&TC	Semester:5th	Name of the Teaching Faculty:Jyoti Prakash Behura
Subject: WP & BC	No of Days/per week class allotted:4	Semester from 01.10 2021 to 08.01.2022 No of weeks:14
Week No.	Class Day MON, TUE THU, SAT	Theory Topics
1st	04-10-2021	**Unit-1: WAVE PROPAGATION & ANTENNA** 1.1 Effects of environments such as reflection, refraction, interference, diffraction, absorption and attenuation (Definition only)
	05-10-2021	Classification based on Modes of Propagation-Ground wave, Ionosphere ,Sky wave propagation, Space wave propagation
	07-10-2021	1.3 Definition – critical frequency, max. useable frequency, skip distance, fading, Duct propagation
	09-10-2021	Troposphere scatter propagation actual height and virtual height
2nd	21-10-2021	1.4 Radiation mechanism of an antenna-Maxwell equation
	23-10-2021	1.5 Definition - Antenna gains, Directive gain concept.
3rd	25-10-2021	Definition - Directivity, effective aperture, polarization concept.
	26-10-2021	Definition of input impedance, efficiency, Radiator resistance, Bandwidth, Beam width, Radiation pattern
	28-10-2021	1.6 Antenna -types of antenna
	30-10-2021	Mono pole and dipole antenna and omni directional antenna
4th	01-11-2021	1.7 Operation of following antenna with advantage & applications. a) Directional high frequency antenna : , Yagi &Rohmbus only
	02-11-2021	b) UHF &Microwave antenna.: Dish antenna (with parabolic reflector) & Horn antenna 1.8 Basic Concepts of Smart Antennas- Concept and benefits of smart antennas
	06-11-2021	**Unit-2: TRANSMISSION LINES.** 2.1 Fundamentals of transmission line 2.2 Characteristics impedance, methods of calculations & simple numerical. 2.3 Losses in transmission line.
5th	08-11-2021	Methods of calculations & simple numerical. 2.4 Losses in transmission line.
		Class Test-1
	09-11-2021	2.5 Standing wave – SWR, VSWR, Reflection coefficient, simple numerical. 2.6 Quarter wave & half wavelength line

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	11-11-2021	2.7 Impedance matching & Stubs – single & double 2.8 Primary & secondary constant of X-mission line.
	13-11-2021	**Unit-3: TELEVISION ENGINEERING.** 3.1 Define-Aspect ratio, Rectangular Switching. Flicker, Horizontal Resolution, Video bandwidth, Interlaced scanning, Composite video signal, Synchronization pulses
6th	15-11-2021	3.2 TV Transmitter – Block diagram & function of each block
	16-11-2021	3.3 Monochrome TV Receiver -Block diagram & function of each block.
	18-11-2021	3.4 Colour TV signals (Luminance Signal & Chrominance Signal,(I & Q,U & V Signals)..
	20-11-2021	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**
7th	22-11-2021	3.6 Discuss the principle of operation - LCD display
	23-11-2021	Discuss the Principle of operation Large Screen Display.
	25-11-2021	3.7 CATV systems & Types & networks
	27-11-2021	3.8 Digital TV Technology-Digital TV Signals,
8th	29-11-2021	Transmission of digital TV signals
	30-11-2021	Digital TV receiver Video programme processor unit.
	02-12-2021	**Revision**
	04-12-2021	**1st Internal**
9th	06-12-2021	**Unit-4: MICROWAVE ENGINEERING.** 4.1 Define Microwave Wave Guides
	07-12-2021	4.2 Operation of rectangular wave gives and its advantage.
	09-12-2021	4.3 Propagation of EM wave through wave guide with TE & TM modes.
	11-12-2021	4.4 Circular wave guide.
10th	13-12-2021	4.5 Operational Cavity resonator.

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	14-12-2021	4.6 Working of Directional coupler, Isolators & Circulator
	16-12-202	4.7 Microwave tubes-Principle of operational of two Cavity Klystron
	18-12-2021	4.8 Principle of Operations of Travelling Wave Tubes
11th	20-12-2021	4.9 Principle of Operations of Cyclotron
	21-12-2021	4.10 Principle of Operations of Tunnel Diode
	23-12-2021	4.10 Principle of Operations of Gunn diode ,Revision
		Class Test-2
	25-12-2021	**Unit-5: Introduction to Broadband communication**
12th	27-12-2021	5.1 Broadband communication system
	28-12-2021	Fundamental of Components and Network architecture
	30-12-2021	5.2 Cable broadband data network- architecture, importance Future of broadband telecommunication internet based network.
13th	03-01-2022	5.3 SONET(Synchronous Optical Network)
	04-01-2022	Signal frame components topologies advantages applications and disadvantages
	06-01-2022	5.4 ISDN - ISDN Devices interfaces, services, Architecture, applications,
	08-01-2022	BISDN -interfaces & Terminals, protocol architecture applications
		2nd Internal

Jyoti Prakash Behera.
01/10/21
Signature of Faculty

HOD, E&TC **Academic Coordinator** **Principal**