

# Bhubanananda Orissa School of Engineering

## Lesson Plan

<b>Discipline:</b> E&TC	<b>Semester:</b> 5 <sup>th</sup>	<b>Name of the Teaching Faculty:</b> Jyoti Prakash Behura
<b>Subject:</b> WP & BC	<b>No of Days/per week class allotted:</b> 4	<b>Semester from</b> 01.10 2021 <b>to</b> 08.01.2022 <b>No of weeks:</b> 14
<b>Week No.</b>	<b>Class Day</b> MON, TUE THU, SAT	<b>Theory Topics</b>
1 <sup>st</sup>	04-10-2021	<b>Unit-1: WAVE PROPAGATION &amp; ANTENNA</b> 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
2 <sup>nd</sup>	21-10-2021	1.4 Radiation mechanism of an antenna-Maxwell equation
	23-10-2021	1.5 Definition - Antenna gains, Directive gain concept.
3 <sup>rd</sup>	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
4 <sup>th</sup>	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	<b>Unit-2: TRANSMISSION LINES.</b> 2.1 Fundamentals of transmission line 2.2 Characteristics impedance, methods of calculations & simple numerical. 2.3 Losses in transmission line.
5 <sup>th</sup>	08-11-2021	Methods of calculations & simple numerical. 2.4 Losses in transmission line.
		<b>Class Test-1</b>
	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	<b>Unit-3: TELEVISION ENGINEERING.</b> 3.1 Define-Aspect ratio, Rectangular Switching. Flicker, Horizontal Resolution, Video bandwidth, Interlaced scanning, Composite video signal, Synchronization pulses
6 <sup>th</sup>	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) – <b>only Comparison based on application</b>
7 <sup>th</sup>	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,
8 <sup>th</sup>	29-11-2021	Transmission of digital TV signals
	30-11-2021	Digital TV receiver Video programme processor unit.
	02-12-2021	<b>Revision</b>
	04-12-2021	<b>1<sup>st</sup> Internal</b>
9 <sup>th</sup>	06-12-2021	<b>Unit-4: MICROWAVE ENGINEERING.</b> 4.1 Define Microwave Wave Guides
	07-12-2021	4.2 Operation of rectangular wave guides 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.
10 <sup>th</sup>	13-12-2021	4.5 Operational Cavity resonator.

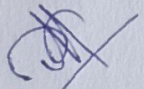


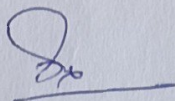
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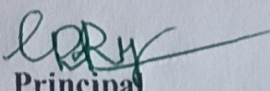
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	14-12-2021	4.6 Working of Directional coupler, Isolators & Circulator
	16-12-2021	4.7 Microwave tubes-Principle of operational of two Cavity Klystron
	18-12-2021	4.8 Principle of Operations of Travelling Wave Tubes
11 <sup>th</sup>	20-12-2021	4.9 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
		<b>Class Test-2</b>
	25-12-2021	<b>Unit-5: Introduction to Broadband communication</b>
12 <sup>th</sup>	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.
13 <sup>th</sup>	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
		<b>2<sup>nd</sup> Internal</b>

*Jyoti Prakash Bedina .*  
01/10/21  
Signature of Faculty

  
HOD, E&TC

  
Academic Coordinator

  
Principal