Bhubanananda Orissa School of Engineering
Lesson Plan

Discipline: ETC	Semester: 6th	Name of the Teaching Faculty: RUPALI LAYAK	
Subject: ADVANCE COMMUNICATION	No of Days/per week class allotted: 5	Semester from : 14.02.2023 to 23.05.2023 No of weeks: 15	
Week No.	**Class Day : MON, TUE, WED, FRI, SAT**	**Theory Topics**	
1st	14.02.2023	CHAPTER 1-- RADAR & NAVIGATION AIDS 1.1 Basic Radar, advantages & applications	
	15.02.2023	1.2 Working principle of Simple Radar system , its types	
	17.02.2023		
2nd	20.02.2023	1.3 Radar range equation &Performance factor of radar	
	21.02.2023	1.4 Working principle of Pulsed Radar system.	
	22.02.2023	1.5 Function of radar indication and Working principle of moving target indicator.	
	24.02.2023	1.5 Function of radar indication and Working principle of moving target indicator.	
3rd	27.02.2023	1.6 Define Doppler effect &Working principle of C.W Radar.	
	28.02.2023	1.7 Radar aids to Navigation	
	01-03-2023	1.8 Aircraft landing system.	
	03-03-2023	1.9 Navigation Satellite System.(NAVSAT) & GPS System	
	04-03-2023	CHAPTER 2-- SATELLITE COMMUNICATION 2.1 Basic Satellite Transponder &Kepler's Laws	
4th	06-03-2023	2.2 Satellite Orbital patterns and elevation(LEO,MEO & GEO) categories	
	10-03-2023	2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage	
	11-03-2023	2.4 Working of the Satellite sub system	

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5th	**13-03-2023**	2.5 Satellite frequency allocation and frequency bands.
	14-03-2023	2.6 General structure of satellite Link system (Uplink, Down link, Transponder, Crosslink)
	15-03-2023	2.7 Working principle of direct broadcast system (DBS)
	17-03-2023	2.8 Working principle of VSAT system.
6th	20-03-2023	2.9 Define multiple accessing & name various types. 2.10 Time Division Multiple Accessing (TDMA) & Code Division Multiple Accessing (CDMA) – block diagram, its advantages & disadvantages.
	21-03-2023	2.10 Multiple Accessing (CDMA) – block diagram, its advantages & disadvantages.
	22-03-2023	2.11 Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio.
	24-03-2023	2.12 Working principle of GPS Receiver & Transmitter& applications. 2.13 Optical Satellite Link transmitter & Receiver
	25-03-2023	**CLASS TEST 1**
7th	27-03-2023	**CHAPTER 3--OPTICAL FIBER COMMUNICATION.** 3.1 Basic principle of Optical communication.
	28-03-2023	3.2 Compare the advantage and disadvantage of optical fibres&metallic cables
	29-03-2023	3.3 Electromagnetic Frequency and wave line spectrum
	31-03-2023	INTERNAL TEST 1
8th	03 -04-2023	3.4 Types of optical fibres& principles of propogation in a fibre using Ray Theory
	04 -04-2023	3.5 Optical fiber construction
	05 -04-2023	3.6 Define terms: Velocity of propagation, Critical angle, Acceptance angle numerical aperture

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	08 -04-2023	3.7 Optical fibre communication system- block diagram & working principle
9th	10 -04-2023	3.8 Modes of propagation and index profile of optical fiber
	11 -04-2023	3.9 Types optical fiber configuration: Single-mode step index, Multi-mode step index, Multi-mode Graded index
	12 -04-2023	3.10 Attenuation in optical fibers – Absorption losses, scattering, losses, bending losses, core and cladding losses- Dispersion – material Dispersion, waveguide dispersion, Intermodal dispersion
	15 -04-2023	3.11 Optical sources(Transmitter) & types – LED- semiconductor laser diodes
10th	17 -04-2023	3.12 LASER -its working principles, block diagram using laser feedback control circuit
	18 -04-2023	3.13 Optical detectors – PIN and APD diodes &Block diagram using APDConnectors and splices –Optical cables - Couplers 3.14 Optical repeater & Single Channel system
	19 -04-2023	3.15 Applications of optical fibres – civil, Industry and Military application
	21 -04-2023	3.16 Concept of Wave Length Division Multiplexing (WDM) principles.
11th	24 -04-2023	**CHAPTER 4-- TELECOMMUNICATION SYSTEM** 4.1 Working of Electronic Telephone System. (Telephone Set) 4.2 Function of switching system.& Call procedures
	25 -04-2023	4.3 Space and time switching. 4.4 Numbering plan of telephone networks (National Schemes & International Numbering)
	26 -04-2023	4.5 Working principle of a PBX & Digital EPABX.
	28 -04-2023	4.6 Units of Power Measurement.
	29 -04-2023	4.7 Working principle of Internet Protocol Telephone
12th	01 -05-2023	4.8 Working principle of Internet Telephone
	02 -05-2023	**CHAPTER 5-- Data Communication** 5.1 Basic concept of Data Communication 5.2 Architecture, Protocols and Standards
	03 -05-2023	5.3 Data Communication Circuits 5.4 Types of Transmission & Transmission Modes

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	05 -05-2023	5.5 Data Communication codes 5.6 Basic idea of Error control & Error Detection
	06 -05-2023	5.7 MODEM & its basic block diagram& common features Voice Band Modem
13th	08 -05-2023	**CHAPTER 6-- WIRELESS COMMUNICATION** 6.1 Basic concept of Cell Phone, frequency reuse channel assignment strategic handoff co-channel Interference and system capacity of a Cellular Radio systems.
	09 -05-2023	6.2 Concept of improving coverage and capacity in cellular system (Cell Splitting, Sectoring)
	10 -05-2023	6.3 Wireless Systems and its Standards.
	12 -05-2023	6.4 Discuss the GSM (Global System for Mobile) service and features.
	13 -05-2023	6.5 Architecture of GSM system & GSM mobile station &channel types of GSM system.
14th	15 -05-2023	6.6 working of forward and reveres CDMA channel, the frequency and channel specifications
	16 -05-2023	6.7 Architecture and features of GPRS. 6.8 Discuss the mobile TCP, IP protocol.
	17 -05-2023	6.9 Working of Wireless Application Protocol (WAP). 6.10 Features of SMS, MMS, 1G,2G, 3G, 4G& 5G Wireless network.
	20 -05-2023	6.11 Smart Phone and discuss its features indicate through Block diagram.
15th	22 -05-2023	**CLASS TEST 2**
	23 -05-2023	**INTERNAL TEST 2**

Reupali Cayak
Signature of Faculty

HOD E&TC 3/02/2023

Sr. Lecturer
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