LESSON PLAN

GIET(POLY),JAGATPURCUTTACK

DISCIPLINE– Electronics Engg.	SEMESTER– 6TH	NAME OF THE TEACHING FACULTY— AMIYA RANJAN DAS
SUBJECT- ADVANCE COMMUNICATION ENGG.(TH-1)	NO.OF DAYS PER WEEK CLASS ALLOTTED-05	SEMESTER: FROM--22.12.2025 TO—18.04.2026 NO OF WEEKS--15
WEEK	CLASS/DAY	THEORY/PRACTICALTOPICS
1st	1st	**1. RADAR & NAVIGATION AIDS.** 1.1 Basic Radar, advantages & applications
	2nd	1.2 Working principle of Simple Radar system , its types
	3rd	1.3 Radar range equation &Performance factor of radar.
	4th	1.4 Working principle of Pulsed Radar system.
	5th	1.5 Function of radar indication and Working principle of moving target indicator
2nd	1st	1.6 Define Doppler effect &Working principle of C.W Radar
	2nd	1.7 Radar aids to Navigation
	3rd	1.8 MTI Radar- working principle
	4th	1.8 Aircraft landing system.
	5th	1.9 Navigation Satellite System.(NAVSAT) & GPS System
3rd	1st	**2. SATELLITE COMMUNICATION.** 2.1 Basic Satellite Transponder & Kepler's Laws
	2nd	2.2 Satellite Orbital patterns and elevation(LEO,MEO & GEO) categories
	3rd	2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage.(contd.....)
	4th	2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage
	5th	2.4 Working of the Satellite sub system
4th	1st	2.5 Satellite frequency allocation and frequency bands)
	2nd	2.6 General structure of satellite Link system (Uplink, Down link, Transponder, Crosslink)
	3rd	2.7 Working principle of direct broadcast system (DBS)
	4th	2.8 Working principle of VSAT system. 2.9 Define multiple accessing & name various types.
	5th	2.10 Time Division Multiple Accessing(TDMA) & Code Division Multiple Accessing (CDMA) – block diagram, its advantages & dis-advantages. (contd.....)
5th	1st	2.10 Time Division Multiple Accessing(TDMA) & Code Division Multiple Accessing (CDMA) – block diagram, its advantages & dis-advantages.
	2nd	2.11 Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio. (contd.....)
	3rd	2.11 Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio.
	4th	2.12 Working principle of GPS Receiver & Transmitter& applications
	5th	2.13 Optical Satellite Link transmitter & Receiver
6TH	1st	**3. OPTICAL FIBER COMMUNICATION.** 3.1 Basic principle of Optical communication 3.2 Compare the advantage and disadvantage of optical fibres &metallic Cables.
	2nd	3.3 Electromagnetic Frequency and wave line spectrum
	3rd	3.4 Types of optical fibres &principles of propogation in a fibre using

		3.5 Optical fiber construction
	4th	3.6 Define terms: Velocity of propagation, Critical angle, Acceptance angle Numerical aperture
	5th	3.7 Optical fibre communication system- block diagram & working principle
7TH	1st	3.8 Modes of propagation and index profile of optical fiber
	2nd	3.9 Types optical fiber configuration: Single-mode step index, Multi-mode step index, Multi-mode Graded index
	3rd	3.10 Attenuation in optical fibers – Absorption losses, scattering, losses, bending losses, core and cladding losses- Dispersion – material Dispersion, waveguide dispersion, Intermodal dispersion.(contd.....)
	4th	3.10 Attenuation in optical fibers – Absorption losses, scattering, losses, bending losses, core and cladding losses- Dispersion – material Dispersion, waveguide dispersion, Intermodal dispersion
	5th	3.11 Optical sources(Transmitter) & types – LED- semiconductor laser diodes
8TH	1st	3.12 LASER -its working principles, block diagram using laser feedback control circuit
	2nd	3.13 Optical detectors – PIN and APD diodes &Block diagram using APD Connectors and splices –Optical cables - Couplers
	3rd	3.14 Optical repeater & Single Channel system
	4th	3.15 Applications of optical fibres – civil, Industry and Military application
	5th	3.16 Concept of Wave Length Division Multiplexing (WDM) principles.
9TH	1st	**4. TELECOMMUNICATION SYSTEM** 4.1 Working of Electronic Telephone System. (Telephone Set) .(contd.....)
	2nd	4.1 Working of Electronic Telephone System. (Telephone Set)
	3rd	4.2 Function of switching system.& Call procedures
	4th	4.3 Space and time switching.
	5th	4.4 Numbering plan of telephone networks (National Schemes & International Numbering) .(contd.....)
10TH	1st	4.4 Numbering plan of telephone networks (National Schemes & International Numbering)
	2nd	4.5 Working principle of a PBX & Digital EPABX.
	3rd	4.6 Units of Power Measurement.
	4th	4.7 Working principle of Internet Protocol Telephone
	5th	4.8 Working principle of Internet Telephone
11TH	1st	**5. Data Communication** 5.1 Basic concept of Data Communication
	2nd	5.2 Architecture, Protocols and Standards.(contd.....)
	3rd	5.2 Architecture, Protocols and Standards
	4th	5.3 Data Communication Circuits
	5th	5.4 Types of Transmission & Transmission Modes.(contd.....)
12TH	1st	5.4 Types of Transmission & Transmission Modes
	2nd	5.5 Data Communication codes
	3rd	5.6 Basic idea of Error control & Error Detection
	4th	5.7 MODEM & its basic block diagram& common features Voice Band Modem.(contd.....)
	5th	5.7 MODEM & its basic block diagram& common features Voice Band Modem
	1st	**6. WIRELESS COMMUNICATION** 6.1 Basic concept of Cell Phone,frequency reuse channel assignment strategic

13TH		Radio systems.(contd.....)
	2nd	6.1 Basic concept of Cell Phone,frequency reuse channel assignment strategic handoff co-channel Interference and system capacity of a Cellular Radio systems
	3rd	6.2 Concept of improving coverage and capacity in cellular system (Cell Splitting, Sectoring) .(contd.....)
	4th	6.2 Concept of improving coverage and capacity in cellular system (Cell Splitting, Sectoring)
	5th	6.3 Wireless Systems and its Standards
14TH	1st	6.4 Discuss the GSM (Global System for Mobile) service and features
	2nd	6.5 Architecture of GSM system & GSM mobile station &channel types of GSM system.(contd.....)
	3rd	6.5 Architecture of GSM system & GSM mobile station &channel types of GSM system
	4th	6.6 working of forward and reveres CDMA channel,the frequency and channel specifications.(contd.....)
	5th	6.6 working of forward and reveres CDMA channel,the frequency and channel specifications
15TH	1st	6.7 Architecture and features of GPRS.
	2nd	6.8 Discuss the mobile TCP, IP protocol.
	3rd	6.9 Working of Wireless Application Protocol (WAP).
	4th	6.10 Features of SMS, MMS, 1G,2G, 3G, 4G& 5G Wireless network.
	5th	6.11 Smart Phone and discuss its features indicate through Block diagram

23.12.25
Sign of lecturer

23.12.25
sign of sr. lecturer

Head of Dept.
Electrical & ETC F...
G... E.T (POLY)...

23.12.25
Sign of principal