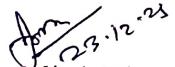


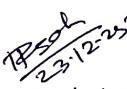
LESSON PLAN
GIET(POLY),JAGATPURCUTTACK

| 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 | 1 st | <u>1. RADAR & NAVIGATION AIDS.</u> 1.1 Basic Radar, advantages & applications |
| | 2 nd | 1.2 Working principle of Simple Radar system , its types |
| | 3 rd | 1.3 Radar range equation & Performance factor of radar. |
| | 4 th | 1.4 Working principle of Pulsed Radar system. |
| | 5 th | 1.5 Function of radar indication and Working principle of moving target indicator |
| 2nd | 1 st | 1.6 Define Doppler effect & Working principle of C.W Radar |
| | 2 nd | 1.7 Radar aids to Navigation |
| | 3 rd | 1.8 MTI Radar- working principle |
| | 4 th | 1.8 Aircraft landing system. |
| | 5 th | 1.9 Navigation Satellite System.(NAVSAT) & GPS System |
| 3rd | 1 st | <u>2. SATELLITE COMMUNICATION.</u> 2.1 Basic Satellite Transponder & Kepler's Laws |
| | 2 nd | 2.2 Satellite Orbital patterns and elevation(LEO,MEO & GEO) categories |
| | 3 rd | 2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage.(contd.....) |
| | 4 th | 2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage |
| | 5 th | 2.4 Working of the Satellite sub system |
| 4th | 1 st | 2.5 Satellite frequency allocation and frequency bands) |
| | 2 nd | 2.6 General structure of satellite Link system (Uplink, Down link, Transponder, Crosslink) |
| | 3 rd | 2.7 Working principle of direct broadcast system (DBS) |
| | 4 th | 2.8 Working principle of VSAT system. 2.9 Define multiple accessing & name various types. |
| | 5 th | 2.10 Time Division Multiple Accessing(TDMA) & Code Division Multiple Accessing (CDMA) – block diagram, its advantages & dis-advantages. (contd.....) |
| 5th | 1 st | 2.10 Time Division Multiple Accessing(TDMA) & Code Division Multiple Accessing (CDMA) – block diagram, its advantages & dis-advantages. |
| | 2 nd | 2.11 Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio. (contd.....) |
| | 3 rd | 2.11 Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio. |
| | 4 th | 2.12 Working principle of GPS Receiver & Transmitter& applications |
| | 5 th | 2.13 Optical Satellite Link transmitter & Receiver |
| 6TH | 1 st | <u>3. OPTICAL FIBER COMMUNICATION.</u> 3.1 Basic principle of Optical communication 3.2 Compare the advantage and disadvantage of optical fibres & metallic Cables. |
| | 2 nd | 3.3 Electromagnetic Frequency and wave line spectrum |
| | 3 rd | 3.4 Types of optical fibres & principles of propagation in a fibre using |

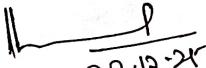
| | | |
|------------------|-----------------|--|
| | | 3.5 Optical fiber construction |
| | 4 th | 3.6 Define terms: Velocity of propagation, Critical angle, Acceptance angle Numerical aperture |
| | 5 th | 3.7 Optical fibre communication system- block diagram & working principle |
| 7 TH | 1 st | 3.8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

| | | |
|------------------|-----------------|--|
| | | Radio systems.(contd.....) |
| 13 TH | 2 nd | 6.1 Basic concept of Cell Phone,frequency reuse channel assignment strategic handoff co-channel Interference and system capacity of a Cellular Radio systems |
| | 3 rd | 6.2 Concept of improving coverage and capacity in cellular system (Cell Splitting, Sectoring) .(contd.....) |
| | 4 th | 6.2 Concept of improving coverage and capacity in cellular system (Cell Splitting, Sectoring) |
| | 5 th | 6.3 Wireless Systems and its Standards |
| | 1 st | 6.4 Discuss the GSM (Global System for Mobile) service and features |
| 14 TH | 2 nd | 6.5 Architecture of GSM system & GSM mobile station &channel types of GSM system.(contd.....) |
| | 3 rd | 6.5 Architecture of GSM system & GSM mobile station &channel types of GSM system |
| | 4 th | 6.6 working of forward and reveres CDMA channel,the frequency and channel specifications.(contd.....) |
| | 5 th | 6.6 working of forward and reveres CDMA channel,the frequency and channel specifications |
| | 1 st | 6.7 Architecture and features of GPRS. |
| 15 TH | 2 nd | 6.8 Discuss the mobile TCP, IP protocol. |
| | 3 rd | 6.9 Working of Wireless Application Protocol (WAP). |
| | 4 th | 6.10 Features of SMS, MMS, 1G,2G, 3G, 4G& 5G Wireless network. |
| | 5 th | 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. (i.e.)
Electrical & ETC F.
G.I.E.T (i.O.L.Y).
23.12.25


23.12.25
Sign of principal