



LESSON PLAN

SUBJECT:Th.1 (ADVANCE COMMUNICATION ENGINEERING)

Name of the Faculty- Er.Niranjan Sahu

Branch- Electrical & Electronics Engineering

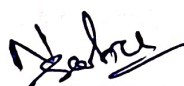
Session- 2024-25


Semester- 6th

Examination- 2025(S)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	RADAR & NAVIGATION AIDS	10	10
2	SATELLITE COMMUNICATION	15	15
3	OPTICAL FIBER COMMUNICATION	15	15
4	TELECOMMUNICATION SYSTEM	10	10
5	DATA COMMUNICATION	10	10
6	WIRELESS COMMUNICATION	15	14
TOTAL		75	74


SIGN OF FACULTY


SIGN HOD

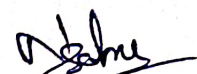
LESSON PLAN		
Discipline: ELECTRICAL AND ELECTRONICS ENGINEERING	Semester: 6th	Name of the Teaching Faculty: Er.Niranjan sahu
		SESSION : 2024-25 EXAMINATION : 2025 (S)
Week	Class Day	Topics to be covered
1 st	1 st	Radar and navigation aids.
	2 nd	1.1 Basic Radar, advantages & applications
	3 rd	1.2 Working principle of Simple Radar system , its types
	4 th	1.3 Radar range equation & Performance factor of radar.
	5 th	1.4 Working principle of Pulsed Radar system.
2 nd	1 st	1.5 Function of radar indication and Working principle of moving target indicator.
	2 nd	1.6 Define Doppler effect & Working principle of C.W. Radar.
	3 rd	1.7 Radar aids to Navigation
	4 th	1.8 MTI Radar-working principle
	5 th	1.8 Aircraft landing system.
3 rd	1 st	1.9 Navigation Satellite System.(NAVSAT) & GPS System
	2 nd	SATELLITE COMMUNICATION
	3 rd	2.1 Basic Satellite Transponder & Kepler's Laws
	4 th	2.2 Satellite Orbital patterns and elevation (LEO,MEO & GEO) categories
	5 th	2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage

Week	Class Day	Topics to be covered
4th	1st	2.5 Satellite frequency allocation and frequency bands.
	2nd	2.5 Satellite frequency allocation and frequency bands.
	3rd	2.6 General structure of satellite Link system (Uplink, Down link, Transponder, Crosslink)
	4th	2.7 Working principle of direct broadcast system (DBS)
	5th	2.8 Working principle of VSAT system.
5th	1st	2.9 Define multiple accessing & name various types.
	2nd	2.10 Time Division Multiple Accessing (TDMA) & Code Division Multiple
	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	OPTICAL FIBER COMMUNICATION.
	2nd	3.1 Basic principle of Optical communication.
	3rd	3.2 Compare the advantage and disadvantage of optical fibres & metallic cables
	4th	3.3 Electro magnetic Frequency and wave line spectrum
	5th	3.4 Types of optical fibres & principles of propagation in a fibre using Ray Theory

Week	Class Day	Topics to be covered
7th	1st	3.6 Define terms: Velocity of propagation, Critical angle, Acceptance angle numerical aperture
	2nd	3.6 Define terms: Velocity of propagation, Critical angle, Acceptance angle numerical aperture
	3rd	3.7 Optical fibre communication system-block diagram & working principle
	4th	3.8 Modes of propagation and index profile of optical fiber
	5th	3.9 Types optical fiber configuration: Single-mode step index, Multi-mode step index, Multi-mode Graded index
8th	1st	3.10 Attenuation in optical fibers – Absorption losses, scattering, losses, bending losses, core and cladding losses- Dispersion – material Dispersion, waveguide dispersion,
	2nd	3.11 Optical sources (Transmitter) & types – LED- semiconductor laser diodes
	3rd	3.12 LASER -its working principles, block diagram using laser feedback control circuit
	4th	3.13 Optical detectors–PIN and AP Ddiodes & Block diagram
	5th	3.14 Optical repeater & Single Channel system
9th	1st	3.15 Applications of optical fibres–civil, Industry and Military application
	2nd	3.16 Concept of Wave Length Division Multiplexing (WDM) principles.
	3rd	TELECOMMUNICATION SYSTEM
	4th	4.1 Working of Electronic Telephone System. (Telephone Set)
	5th	4.2 Function of switching system. & Call procedures

Week	Class Day	Topics to be covered
10 th	1 st	4.3 Space and time switching.
	2 nd	4.4 Numbering plan of telephone networks (National Schemes & International Numbering)
	3 rd	4.5 Working principle of a PBX & Digital EPABX.
	4 th	4.6 Units of Power Measurement.
	5 th	4.7 Working principle of Internet Protocol Telephone
11 th	1 st	4.8 Working principle of Internet Telephone
	2 nd	Data Communication
	3 rd	5.1 Basic concept of Data Communication
	4 th	5.2 Architecture, Protocols and Standards
	5 th	5.3 Data Communication Circuits
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
	5 th	CLASS TEST

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


Sign. Of Faculty


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