LESSON Plan

		Discipline: ETC	Semester-6th Summer-2024	Name of the Teachng Faculty: Sri Jogeswar Naik(Lect. ETC Engg)
	Sl. No.	Subject-Th.1- ADVANCE COMMUNICATION ENGINEERING	No. Of Days/Week class alloted:05	Semester From date: 16.01.2024 To date: 26.04.2024 (No of weeks: 15)
		Weeks/Months	Class Day	Topic
1		3rd week 16 jan To 20 jan	1st	1. RADAR & NAVIGATION AIDS
			2nd	1.1 Basic Radar, advantages & applications
			3rd	1.2 Working principle of Simple Radar system , its types
			4th	1.3 Radar range equation &Performance factor of radar
			5th	1.4 Working principle of Pulsed Radar system.
2		4th week 22 jan To 27 jan	1st	1.5 Function of radar indication and Working principle of moving target indicator.
			2nd	1.6 Define Doppler effect&Working principle of C.W Radar.
			3rd	1.7 Radar aids to Navigation.
			4th	1.8 MTI Radar- working principle
			5th	1.8 Aircraft landing system.
3		th week 29 jan To 1st week 03 fe	1st	1.9 Navigation Satellite System.(NAVSAT) & GPS System
			2nd	2. SATELLITE COMMUNICATION
			3rd	2.1 Basic Satellite Transponder & Kepler's Laws.
			4th	2.2 Satellite Orbital patterns and elevation(LEO,MEO & GEO) categories
			5th	2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage .
4		2nd week 05 feb To 10 feb	1st	2.4 Working of the Satellite sub system
			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.
5		3rd week 12 feb To 17 feb	1st	2.9 Define multiple accessing & name various types
			2nd	2.10 Time Division Multiple Accessing(TDMA) & Code Division Multiple Accessing (CDMA) – block diagram, its advantages & disadvantages
			3rd	2.11 Satellite Application- Communication Satellite(MSAT) Digital Satellite Radio
			4th	2.12 Working principle of GPS Receiver & Transmitter &
			5th	2.13 Optical Satellite Link transmitter & Receiver
6		4th week 19 feb To 24 feb	1st	3. OPTICAL FIBER COMMUNICATION.
			3rd	3.1 Basic principle of Optical communication.
			3rd	Basic principle of Optical communication.
			4th	3.2 Compare the advantage and disadvantage of optic fibres&metallic cables
			5th	3.3 Electromagnetic Frequency and wave line spectrum

		1st	3.4 Types of optical fibres&principles of propogation in a fibre using Ray Theory	
		2nd	3.5 Optical fiber construction	
7	h week 26 feb To1st week 02 mar	3rd	3.6 Define terms: Velocity of propagation, Critical angle, Acceptance angle numericalaperture	
		4th	3.7 Optical fibre communication system- block diagram & working principle	
		5th	3.8 Modes of propagation and index profile of optical fiber	
		1st	3.9 Types optical fiber configuration: Single-mode step index, Multi-mode step index, Multi-mode Graded index	
		2nd	3.10 Attenuation in optical fibers – Absorption losses, scattering, losses, bending losses, core and cladding losses-Dispersion – material Dispersion, waveguide dispersion, Intermodal dispersion	
8	2nd week 04 march To 09 march	3rd	3.11 Optical sources(Transmitter) & types – LED-semiconductor laser diodes	
		4th	3.12 LASER -its working principles, block diagram using laser feedback control circuit	
		5th	3.13 Optical detectors – PIN and APD diodes &Block diagram using APDConnectors and splices –Optical cables - Couplers	
		1st	3.14 Optical repeater & Single Channel system	
		2nd	3.15 Applications of optical fibres – civil, Industry and Military application	
9	3rd week 11 march To 16 march	3rd	3.16 Concept of Wave Length Division Multiplexing (WDM) principles	
		4th	4. TELECOMMUNICATION SYSTEM	
		5th	4.1 Working of Electronic Telephone System. (Telephone Set)	
		1st	4.2 Function of switching system.& Call procedures	
		2nd	4.3 Space and time switching.	
10	4th week 18 march To 23 march	3rd	4.4 Numbering plan of telephone networks (National Schemes & International Numbering)	
		4th	4.5 Working principle of a PBX & Digital EPABX	
		4th	4.6 Units of Power Measurement.	
		1st	4.7 Working principle of Internet Protocol Telephone.	
		2nd	4.8 Working principle of Internet Telephone.	
11	5th week 25 march To 30 march	3rd	5. Data Communication	
		4th	5.1 Basic concept of Data Communication	
		5th	5.2 Architecture, Protocols and Standards	
		1st	5.3 Data Communication Circuits	
		2nd	5.4 Types of Transmission & Transmission Modes	
12	1st week 01 april To 06 april	3rd	5.5 Data Communication codes	
		4th	5.6 Basic idea of Error control & Error Detection	
		5th	5.7 MODEM & its basic block diagram& common features Voice Band Modem	

13	2nd week 08 april To 13 april	1st	6. WIRELESS COMMUNICATION
		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)
		4th	6.3 Wireless Systems and its Standards.
		5th	6.4 Discuss the GSM (Global System for Mobile) service and features.
14	3rd week 15 april To 20 april	1st	6.5 Architecture of GSM system & GSM mobile station &channel types of GSM system
		2nd	6.6 working of forward and reveres CDMA channel,the frequency and channel specifications
		3rd	6.7 Architecture and features of GPRS.
		4th	6.8 Discuss the mobile TCP, IP protocol.
		5th	6.9 Working of Wireless Application Protocol (WAP).
15	4th week 22 april To 26 april	1st	6.10 Features of SMS, MMS, 1G,2G, 3G, 4G& 5G Wireless network.
		2nd	6.11 Smart Phone and discuss its features indicate through Block diagram.
		3rd	Data Communication Circuits
		4th	Architecture, Protocols and Standards
		5th	Data Communication codes

Signature of the Faculty

Lesson Plan

		Discipline: ETC	Semester-4th Summer-2024	Name of the Teachng Faculty: Sri Jogeswar Naik(Lect. ETC Engg)
SI. No.		Subject-TH-2 DATA COMMUNICATION & COMPUTER NETWORK	No. Of Days/Week class alloted:04	Semester From date: 16.01.2024 To date: 26.04.2024 (No of weeks: 15)
		Weeks/Months	**Class Day**	**Topic**
1		3rd week 16 jan To 20 jan	1st	Unit-1. Network& Protocol(INTRODUCTION)
			2nd	1.1 Data Communication.
			3rd	1.2 Networks.
			4th	1.3 Protocol & Architecture, Standards, OSI, TCP/IP
2		4th week 22 jan To 27 jan	1st	Protocol & Architecture, Standards, OSI, TCP/IP
			2nd	Unit-2. Data Transmission & Media.
			3rd	2.1 Data transmission Concepts and Terminology.
			4th	Data transmission Concepts and Terminology
3		5th week 29 jan To 1st week 03 feb	1st	2.2 Analog and Digital Data transmission
			2nd	2.3 Transmission impairments, Channel capacity.
			3rd	Transmission impairments, Channel capacity
			4th	2.4 Transmission media, Guided Transmission, Wireless Transmission.
4		2nd week 05 feb To 10 feb	1st	Unit-3. Data Encoding(INTRODUCTION)
			2nd	3.1 Data encoding,
			3rd	3.2 Digital data digital signals,
			4th	3.3 Digital data analog signals
5		3rd week 12 feb To 17 feb	1st	3.4 Analog data digital signals
			2nd	3.5 Analog data analog signals
			3rd	Unit-4. Data Communication & Data link control
			4th	4.1 Asynchronous and Synchronous Transmission
6		4th week 19 feb To 24 feb	1st	4.1 Error Detection
			3rd	4.3 Line configuration.
			3rd	4.4 Flow Control,
			4th	4.5 Error Control
7		5th week 26 feb To1st week 02 march	1st	4.6 Multiplexing
			2nd	4.7 FDM synchronous TDM
			3rd	4.8 Statistical TDM.
			4th	Unit-5. Switching & Routing.
8		2nd week 04 march To 09 march	1st	5.1 Circuit Switching networks
			2nd	5.2 Packet Switching principles.
			3rd	5.3 X.25.
			4th	5.4 Routing in Packet switching.
9		3rd week 11 march To 16 march	1st	5.5 Congestion.
			2nd	5.6 Effects of congestion, congestion control.
			3rd	5.7 Traffic Management.
			4th	5.8 Congestion Control in Packet Switching Network.

10	4th week 18 march To 23 march	1st	Unit-6. LAN Technology.
		2nd	6.1. Topology and Transmission Media.
		3rd	6.2 LAN protocol architecture.
		4th	6.3. Medium Access control.
11	5th week 25 march To 30 march	1st	6.4 Bridges, Hub, Switch.
		2nd	6.5 Ethernet (CSMA/CD), Fiber Channel.
		3rd	6.6 Wireless LAN Technology.
		4th	Unit-7. TCP/IP(INTRODUCTON)
12	1st week 01 april To 06 april	1st	7.1 TCP/IP Protocol Suite.
		2nd	7.2 Basic Protocol functions.
		3rd	7.3 Principles of Internetworking
		4th	7.4 Internet Protocol operations
13	2nd week 08 april To 13 april	1st	7.4 Internet Protocol.
		2nd	Congestion Control in Packet Switching Network.
		3rd	LAN Technology.
		4th	Ethernet (CSMA/CD), Fiber Channel.
14	3rd week 15 april To 20 april	1st	Topology and Transmission Media.
		2nd	Multiplexing
		3rd	LAN Technology.
		3rd	Internet Protocol operations
		4th	Congestion Control in Packet Switching Network.
15	4th week 22 april To 26 april	1st	Switching & Routing.
		2nd	Topology and Transmission Media.
		3rd	Asynchronous and Synchronous Transmission.
		3rd	Internet Protocol operations
		4th	Ethernet (CSMA/CD), Fiber Channel.

Signature of the Faculty