UTKALINSTITUTEOF ENGINEERING &TECHNOLOGY

DISCIPLINE: Electronics& TeleCommunication	SEMESTER: 6THSem	NAME OF THE TEACHING FACULTY: Er.SOUMYSHREE BISWAL		
SUBJECT: **Th.1- ADVANCE COMMUNICATION ENGINEERING**	No of Days/Per week class allotted:**5**Class P/W(**75**)	SemesterFromDate:16/01/2024 ToDate:26/04/2024 No. Of Weeks: **15**		
WEEK	**CLASS DAY**	**THEORYTOPICS**	**REMARKS**	
1st	1st	RADAR &NAVIGATION AIDS. Basic Radar, advantages&applications	Date	Dean/Principal
	2nd	Workingprincipleof SimpleRadarsystem,its types		
	3rd	Radarrange equation &Performancefactorof radar.		
	4th	Workingprincipleof PulsedRadar system		
	5th	Function of radar indication and Working principleofmovingtarget indicator		
2nd	1st	Define Doppler effect&Workingprinciple of C.W Radar.		
	2nd	RadaraidstoNavigation		
	3rd	MTI Radar-working principle		
	4th	Aircraftlandingsystem.		
	5th	NavigationSatellite System.(NAVSAT)&GPS System		

3rd	1st	SATELLITE COMMUNICATION:Basic SatelliteTransponder& Kepler'sLaws		
	2nd	Satellite Orbital patterns andelevation(LEO,MEO& GEO) categories		
	3rd	ConceptofGeostationary Satellite, calculate its height, velocity & round trip time delay		
	4th	Theiradvantage&disadvantage		
	5th	WorkingoftheSatellitesubsystem		
4th	1st	Satellite frequency allocationandfrequency bands		
	2nd	General structure of satellite Link system (Uplink, Down link, Transponder,Crosslink)		
	3rd	Workingprincipleofdirect broadcast system (DBS)		
	4th	WorkingprincipleofVSATsystem.		
	5th	Definemultipleaccessing & name various types		
5th	1st	Time Division Multiple Accessing(TDMA) & Code DivisionMultipleAccessing (CDMA) – block diagram,		
	2nd	Itsadvantages&dis-advantages		
	3rd	Satellite Application- Communication Satellite(MSAT),Digital SatelliteRadio.		
	4th	WorkingprincipleofGPS Receiver&Transmitter&a pplications		

	5th	OpticalSatelliteLink transmitter&Receiver		
6th	1st	OPTICALFIBER COMMUNICATION:Basic principleofOptical communication.		
	2nd	Comparetheadvantage and disadvantage of optical fibres&metallic cables		
	3rd	ElectromagneticFrequency and wave line spectrum		
	4th	Types ofoptical fibres&principles of propogationinafibre using Ray Theory		
	5th	Opticalfiberconstruction ,Define terms: Velocity of propagation,Criticalangle, Acceptance angle numericalaperture		
	1st	Opticalfibre communication system- blockdiagram&working principle		
	2nd	Modesofpropagationand index profile of optical fiber		
	3rd	Types optical fiber configuration:Single-mode step index, Multi-mode step index, Multi-mode Graded index		

7th	4th	Attenuation in optical fibers–Absorptionlosses, scattering,losses,bending losses, core and cladding losses- Dispersion – material Dispersion, waveguide dispersion, Intermodal dispersion		
	5th	Optical sources(Transmitter)& types – LED- semiconductor laser diodes		
8th	1st	LASER -its working principles,blockdiagram using laser feedback control circuit		
	2nd	Opticaldetectors–PINand APD diodes &Blockdiagram using APDConnectorsandsplices –Optical cables - Couplers		
	3rd	Opticalrepeater&Single Channelsystem		
	4th	Applications of optical fibres–civil,Industryand Military application		
	5th	ConceptofWaveLength Division Multiplexing (WDM) principles		
	1st	TELECOMMUNICATION SYSTEM: Working of Electronic Telephone System.(TelephoneSet)		
	2nd	Function of switching system.&Callprocedures		
	3rd	Spaceandtime switching		

9th	4th	Numbering plan of telephone networks (National Schemes & InternationalNumbering)		
	5th	Numbering plan of telephone networks (National Schemes & InternationalNumbering)		
10th	1st	WorkingprincipleofaPBX &DigitalEPABX.		
	2nd	UnitsofPower Measurement.		
	3rd	Workingprincipleof InternetProtocol Telephone		
	4th	Workingprincipleof InternetProtocol Telephone		
	5th	Workingprincipleof Internet Telephone		
11th	1st	DataCommunication:Basic concept of Data Communication		
	2nd	BasicconceptofData Communication		
	3rd	Architecture,ProtocolsandStandards		
	4th	DataCommunicationCircuits		
	5th	TypesofTransmission& TransmissionModes		
12th	1st	TypesofTransmission& TransmissionModes		
	2nd	DataCommunicationcodes		
	3rd	BasicideaofErrorcontrol		
	4th	MODEM& itsbasicblockdiagram		
	5th	commonfeaturesVoiceBandModem		
	1st	WIRELESS COMMUNICATION:Basic conceptofCell Phone		
	2nd	Frequencyreusechannel assignment strategic handoff co-channel Interference		

13th	3rd	System capacity of a CellularRadiosystems.		
	4th	Concept ofimproving coverageandcapacityin cellular system (Cell Splitting, Sectoring)		
	5th	Concept ofimproving coverageandcapacityin cellular system (Cell Splitting, Sectoring)		
14th	1st	WirelessSystems anditsStandards.		
	2nd	Discuss the GSM (Global SystemforMobile)service and features		
	3rd	Architectureof GSM system & GSM mobile station&channeltypesof GSM system.		
	4th	workingofforwardand reveres CDMA channel		
	5th	Thefrequencyandchannel specifications		
15th	1st	Architectureandfeaturesof GPRS.		
	2nd	Discuss the mobileTCP,IPprotocol.		
	3rd	Working of Wireless ApplicationProtocol(WAP)		
	4th	FeaturesofSMS, MMS, 1G,2G,3G,4G&5G Wirelessnetwork		
	5th	SmartPhoneanddiscuss its features indicate through Block diagram.		

Jyotiprakash   Chittaranjan Parida

HOD   **DEAN**   **PRINCIPAL**