NILASAILAINSTITUTEOFSCIENCE&TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(ApprovedbyAICTE&affiliatedtoSCTE&VT,Odisha)

LESSONPLAN

SUBJECT:Th-1(ADVANCECOMMUNICATIONENGINEERING)

CHAPTERWISEDISTRIBUTIONOFPERIODS

Sl.No.	NameofthechapteraspertheSyllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	RADAR&NAVIGATIONAIDS	10	10
2	SATELLITECOMMUNICATION	15	15
3	OPTICALFIBERCOMMUNICATION	15	15
4	TELECOMMUNICATIONSYSTEM	10	10
5	DataCommunication	10	10
6	WIRELESSCOMMUNICATION	15	15
	TOTAL	75	75

Discipline: ELECTRICAL&ELECTRONICSENGG.	Semester: 6TH	Name of the Teaching Faculty: Rakesh Kumar Sethi
Week	**ClassDay**	**Theory/PracticalTopics**
1st	**1st**	RADAR&NAVIGATIONAIDS.
	2nd	1.1BasicRadar,advantages&applications
	3rd	1.2WorkingprincipleofSimpleRadarsystem,itstypes
	4th	1.3Radarrangeequation&Performancefactorofradar.
	5th	1.4WorkingprincipleofPulsedRadarsystem.
2nd	**1st**	1.5 Function of radar indication and Working principle of moving target indicator.
	2nd	1.6DefineDopplereffect&WorkingprincipleofC.WRadar.
	3rd	1.7RadaraidstoNavigation
	4th	1.8MTIRadar-workingprinciple
	5th	1.8Aircraftlandingsystem.
3rd	**1st**	1.9NavigationSatelliteSystem.(NAVSAT)&GPSSystem
	2nd	SATELLITECOMMUNICATION
	3rd	2.1BasicSatelliteTransponder&Kepler'sLaws
	4th	2.2SatelliteOrbitalpatternsandelevation(LEO,MEO&GEO)categories

	5th	2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage
4th	**1st**	2.4WorkingoftheSatellitesubsystem
	2nd	2.5Satellitefrequencyallocationandfrequencybands.
	3rd	2.6 General structure of satellite Link system (Uplink, Down link, Transponder, Crosslink)
	4th	2.7Workingprincipleofdirectbroadcastsystem(DBS)
	5th	2.8WorkingprincipleofVSATsystem.
5th	**1st**	2.9Definemultipleaccessing&namevarioustypes.
	2nd	2.10TimeDivisionMultipleAccessing(TDMA)&CodeDivisionMultiple
	3rd	2.11 Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio.
	4th	2.12WorkingprincipleofGPSReceiver&Transmitter&applications.
	5th	2.13OpticalSatelliteLinktransmitter&Receiver
6th	**1st**	OPTICALFIBERCOMMUNICATION.
	2nd	3.1BasicprincipleofOpticalcommunication.
	3rd	3.2 Compare the advantage and disadvantage of optical fibres&metallic cables
	4th	3.3ElectromagneticFrequencyandwavelinespectrum
	5th	3.4 Types of optical fibres&principles of propogation in a fibre using Ray Theory

7th	1st	3.5Opticalfiberconstruction
	2nd	3.6 Define terms: Velocity of propagation, Critical angle, Acceptance angle numericalaperture
	3rd	3.7Opticalfibrecommunicationsystem-blockdiagram&workingprinciple
	4th	3.8Modesofpropagationandindexprofileofopticalfiber
	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, Intermodal 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	3.13Opticaldetectors–PINandAPDdiodes&Blockdiagramusing
	5th	3.14Opticalrepeater&SingleChannelsystem
9th	1st	3.15Applicationsofopticalfibres–civil,IndustryandMilitaryapplication
	2nd	3.16ConceptofWaveLengthDivisionMultiplexing(WDM)principles.
	3rd	TELECOMMUNICATIONSYSTEM
	4th	4.1WorkingofElectronicTelephoneSystem.(TelephoneSet)
	5th	4.2Functionofswitchingsystem.&Callprocedures

10th	**1st**	4.3Spaceandtimeswitching.
	2nd	4.4 Numbering plan of telephone networks (National Schemes & International Numbering)
	3rd	4.5WorkingprincipleofaPBX&DigitalEPABX.
	4th	4.6UnitsofPowerMeasurement.
	5th	4.7WorkingprincipleofInternetProtocolTelephone
11th	**1st**	4.8WorkingprincipleofInternetTelephone
	2nd	DataCommunication
	3rd	5.1BasicconceptofDataCommunication
	4th	5.2Architecture,ProtocolsandStandards
	5th	5.3DataCommunicationCircuits
12th	**1st**	5.4TypesofTransmission&TransmissionModes
	2nd	5.5DataCommunicationcodes
	3rd	5.6BasicideaofErrorcontrol&ErrorDetection
	4th	5.7 MODEM & its basic block diagram& common features Voice Band Modem
	5th	CLASSTEST

13th	**1st**	WIRELESSCOMMUNICATION
	2nd	6.1 Basic concept of Cell Phone,frequency reuse channel assignment strategic handoff co-channel Interference and system capacity of a Cellular Radiosystems.
	3rd	6.2 Concept of improving coverage and capacity in cellular system (Cell Splitting, Sectoring)
	4th	6.3WirelessSystemsanditsStandards.
	5th	6.3WirelessSystemsanditsStandards.
14th	**1st**	6.4DiscusstheGSM(GlobalSystemforMobile)serviceandfeatures.
	2nd	6.5 Architecture of GSM system & GSM mobile station &channel types of GSM system.
	3rd	6.6 working of forward and reveres CDMA channel,the frequency and channel specifications
	4th	6.7ArchitectureandfeaturesofGPRS.
	5th	6.8DiscussthemobileTCP,IPprotocol.
15th	**1st**	6.9WorkingofWirelessApplicationProtocol(WAP).
	2nd	6.10FeaturesofSMS,MMS,1G,2G,3G,4G&5GWirelessnetwork.
	3rd	6.11SmartPhoneanddiscussitsfeaturesindicatethroughBlockdiagram
	4th	6.11SmartPhoneanddiscussitsfeaturesindicatethroughBlockdiagram
	5th	Revision.