

LESSON PLAN FOR SESSION: 2025-26

DISCIPLINE		SEMESTER	NAME OF THE TEACHING FACULTY	
ETC ENGG.		6th	MRS SOUMYASREE KALYANI PANDA, GUEST FACULTY(ETC)	
SUBJECT:- ADVANCE COMMUNICATION ENGINEERING LAB		NO. OF DAYS PER WEEK CLASS ALLOTED : 04	SEMESTER FROM 22/12/2025 TO 18/04/2026	
			NO. OF WEEKS : 15 NOS.	
WEEKS	CLASS DAYS	THEORY TOPICS		
1ST WEEK	1ST	Setting up a fiber optic analog& digital link including source & detector.		
	2ND	Setting up a fiber optic analog& digital link including source & detector.		
	3RD	Setting up a fiber optic analog& digital link including source & detector.		
2ND WEEK	1ST	PRACTICE		
	2ND	PRACTICE		
	3RD	PRACTICE		
3RD WEEK	1ST	Study of losses in Optical Fiber:		
	2ND	Study of losses in Optical Fiber:		
	3RD	Study of losses in Optical Fiber:		
4TH WEEK	1ST	Measurement of Numerical aperture by using Optical Fibre Kit		
	2ND	Measurement of Numerical aperture by using Optical Fibre Kit		
	3RD	Measurement of Numerical aperture by using Optical Fibre Kit		
5TH WEEK	1ST	PRACTICE		
	2ND	PRACTICE		
	3RD	PRACTICE		
6TH WEEK	1ST	Setting of AM, FM, PWM, Modulator & Demodulator using optical fiber kit.		
	2ND	Setting of AM, FM, PWM, Modulator & Demodulator using optical fiber kit.		
	3RD	Setting of AM, FM, PWM, Modulator & Demodulator using optical fiber kit.		
7TH WEEK	1ST	PRACTICE		
	2ND	PRACTICE		
	3RD	PRACTICE		
8TH WEEK	1ST	Study the following experiments using EPABX Trainer Kit.		
	2ND	Study the following experiments using EPABX Trainer Kit.		
	3RD	Study the following experiments using EPABX Trainer Kit.		
9TH WEEK	1ST	Study the following experiments using EPABX Trainer Kit.		
	2ND	Study the following experiments using EPABX Trainer Kit.		
	3RD	Study the following experiments using EPABX Trainer Kit.		
10TH WEEK	1ST	Study of satellite communication Trainer Kit:		
	2ND	Study of satellite communication Trainer Kit:		
	3RD	Study of satellite communication Trainer Kit:		
11TH WEEK	1ST	Study of satellite communication Trainer Kit:		
	2ND	Study of satellite communication Trainer Kit:		
	3RD	Study of mobile communication Trainer Kit.		
12TH WEEK	1ST	Study of mobile communication Trainer Kit.		
	2ND	Study of mobile communication Trainer Kit.		
	3RD	Study of mobile communication Trainer Kit.		
13TH WEEK	1ST	Study of Rader Trainer Kit.		
	2ND	Study of Rader Trainer Kit.		
	3RD	Study of Rader Trainer Kit.		
14TH WEEK	1ST	Study of ISDN Trainer Kit.		
	2ND	Study of ISDN Trainer Kit.		
	3RD	Study of ISDN Trainer Kit.		
15TH WEEK	1ST	Visit to Telephone Exchange / Mobile Network / earth station / Rader Station.		
	2ND	Visit to Telephone Exchange / Mobile Network / earth station / Rader Station.		
	3RD	Visit to Telephone Exchange / Mobile Network / earth station / Rader Station.		

22/12/25

22/12/26



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E&TC Engg		6th	MRS SOUMYASREE KALYANI PANDA, GUEST FACULTY(ETC)	
ADVANCE COMMUNICATION ENGINEERING		NO. OF DAYS PER WEEK CLASS ALLOTTED : 05	SEMESTER FROM 22/12/2025 TO 18/04/2026	
			NO. OF WEEKS:- 15 NOS.	
WEEKS	CLASS DAYS	THEORY TOPICS		
1st WEEK	1ST	Basic Radar, advantages & applications		
	2ND	Working principle of Simple Radar system , its types		
	3RD	Radar range equation & Performance factor of radar		
	4TH	Working principle of Pulsed Radar system		
	5TH	Function of radar indication and Working principle of moving target indicator		
2nd WEEK	1ST	Define Doppler effect&Working principle of C.W Radar		
	2ND	Radar aids to Navigation		
	3RD	MTI Radar- working principle		
	4TH	Aircraft landing system		
	5TH	Navigation Satellite System.(NAVSAT) & GPS System		
3rd WEEK	1ST	Basic Satellite Transponder & Kepler's Laws		
	2ND	Satellite Orbital patterns and elevation(LEO,MEO & GEO) categories		
	3RD	Concept of Geostationary Satellite, calculate its height, velocity		
	4TH	calculate the round trip time delay & their advantage & disadvantage		
	5TH	Working of the Satellite sub system		
4th WEEK	1ST	Satellite frequency allocation and frequency bands		
	2ND	General structure of satellite Link system (Uplink, Down link, Transponder, Crosslink)		
	3RD	Working principle of direct broadcast system (DBS)		
	4TH	Working principle of VSAT system		
	5TH	Define multiple accessing & name various types		
5th WEEK	1ST	Time Division Multiple Accessing(TDMA) – block diagram, its advantages & dis-advantages		
	2ND	Code Division Multiple Accessing (CDMA)– block diagram, its advantages & dis-advantages		
	3RD	Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio		
	4TH	Working principle of GPS Receiver & Transmitter& applications		
	5TH	Optical Satellite Link transmitter & Receiver		
6th WEEK	1ST	Basic principle of Optical communication,Compare the advantage and disadvantage of optical		
	2ND	Electromagnetic Frequency and wave line spectrum		
	3RD	Types of optical fibres&principles of propogation in a fibre using Ray		
	4TH	Optical fiber construction		
	5TH	Define terms: Velocity of propagation, Critical angle, Acceptance angle numericalaperture		
7th WEEK	1ST	Optical fibre communication system- block diagram & working principle		
	2ND	Modes of propagation and index profile of optical fiber		
	3RD	Types optical fiber configuration: Single-mode step index, Multi-mode step index, Multi-mode		
	4TH	Attenuation in optical fibers – Absorption losses, 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 WEEK	1ST	LASER -its working principles, block diagram using laser feedback control circuit		
	2ND	Optical detectors – PIN and APD diodes &Block diagram using APDConnectors and splices		
	3RD	Optical repeater & Single Channel system		
	4TH	Applications of optical fibres – civil, Industry and Military application		
	5TH	Concept of Wave Length Division Multiplexing (WDM) principles		
9th WEEK	1ST	Working of Electronic Telephone System. (Telephone Set)		
	2ND	Function of switching system		
	3RD	Call procedures of switching system		
	4TH	Space and time switching		
	5TH	Numbering plan of telephone networks (National Schemes & International Numbering)		
10th WEEK	1ST	Working principle of a PBX		
	2ND	Working principle of a Digital EPABX		
	3RD	Units of Power Measurement		
	4TH	Working principle of Internet Protocol Telephone		
	5TH	Working principle of Internet Telephone		

11th WEEK	1ST	Basic concept of Data Communication
	2ND	Architecture, Protocols and Standards
	3RD	Data Communication Circuits
	4TH	Types of Transmission
	5TH	Types of Transmission Modes
12th WEEK	1ST	Data Communication codes
	2ND	Basic idea of Error control
	3RD	Basic idea of Error Detection
	4TH	MODEM & its basic block diagram
	5TH	common features Voice Band modem
13th WEEK	1ST	Basic concept of Cell Phone, frequency reuse channel assignment
	2ND	strategic handoff co-channel Interference and system capacity of a Cellular Radio systems
	3RD	Concept of improving coverage
	4TH	capacity in cellular system (Cell Splitting, Sectoring)
	5TH	Wireless Systems and its Standards
14th WEEK	1ST	Discuss the GSM (Global System for Mobile) service and features
	2ND	Architecture of GSM system & GSM mobile station
	3RD	channel types of GSM system
	4TH	working of forward and reverse CDMA channel, the frequency and channel specifications
	5TH	Architecture and features of GPRS
15th WEEK	1ST	Discuss the mobile TCP, IP protocol
	2ND	Working of Wireless Application Protocol (WAP)
	3RD	Features of SMS, MMS, 1G, 2G WIRELESS NETWORK
	4TH	Features of 3G, 4G & 5G Wireless network
	5TH	Smart Phone and discuss its features indicate through Block diagram

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ETC ENGG.		6TH	MRS SOUMYASREE KALYANI PANDA,GUEST FACULTY(ETC)	
<u>SUBJECT:- INTERNET OF THINGS</u>		NO. OF DAYS PER WEEK CLASS ALLOTTED : 04		SEMESTER FROM 22/12/2025 TO 18/04/2026
				NO. OF WEEKS : 15 NOS.
1ST WEEK	1st	What Is IoT.Architectural Overview of IOT.		
	2nd	Design principles and needed capabilities		
	3rd	IoT Applications, Sensing, Actuation		
	4th	Basics of Networking, M2M and IoT Technology		
2NDWEEK	1st	Fundamentals- Devices and gateways		
	2nd	Data management, Business processes in IoT		
	3rd	Everything as a Service(XaaS)		
	4th	Role of Cloud in IoT, Security aspects in IoT		
3RDWEEK	1st	Hardware Components- Computing (Arduino, Raspberry Pi)		
	2nd	Hardware Components- Computing (Arduino, Raspberry Pi)		
	3rd	Communication, Sensing, Actuation, I/O interfaces.		
	4th	Communication, Sensing, Actuation, I/O interfaces.		
4THWEEK	1st	Software Components- Programming API's (using Python/Node.js/Arduino) for Communication		
	2nd	Software Components- Programming API's (using Python/Node.js/Arduino) for Communication		
	3rd	Software Components- Programming API's (using Python/Node.js/Arduino) for Communication		
	4th	Protocols-MQTT, ZigBee, Bluetooth, CoAP, UDP, TCP.		
5THWEEK	1st	Protocols-MQTT, ZigBee, Bluetooth, CoAP, UDP, TCP.		
	2nd	Solution framework for IoT applications		
	3rd	Solution framework for IoT applications		
	4th	Implementation of Device integration		
6THWEEK	1st	Implementation of Device integration		
	2nd	Data acquisition and integration		
	3rd	Data acquisition and integration		
	4th	Device data storage- Unstructured data storage on cloud/local server		
7THWEEK	1st	Device data storage- Unstructured data storage on cloud/local server,		
	2nd	Authentication, authorization of devices		
	3rd	Authentication, authorization of devices		
	4th	Understanding the IoT Big Picture		
8THWEEK	1st	Understanding the IoT Big Picture		
	2nd	Building the Internet of Things		
	3rd	Building the Internet of Things		
	4th	Understanding Smart Devices,Building Blocks		
9THWEEK	1ST	Understanding Smart Devices,Building Blocks		
	2nd	Understanding Network Conections		
	3rd	Understanding Network Conections		
	4th	Understanding IP Adresses		
10THWEEK	1st	Understanding IP Adresses		
	2nd	Understanding cellular Network & Mesh Network		
	3rd	Understanding cellular Network & Mesh Network		

	4th	Smart TVs: Viewing In a Connected World
11THWEEK	1ST	Smart TVs: Viewing In a Connected World
	2nd	Explain Smart TV & its use
	3rd	Explain Smart TV & its use
	4th	What is Inside Smart TV
12THWEEK	1st	What is Inside Smart TV
	2nd	What a Smart TV does
	3rd	What a Smart TV does
	4th	What a Smart TV does
13THWEEK	1ST	Smart TV Operating Systems
	2nd	Smart TV Operating Systems
	3rd	Define Smart TV Set-Top Devices, briefly explain its each blocks
	4th	Define Smart TV Set-Top Devices, briefly explain its each blocks
14THWEEK	1st	Intergrating Smart TV in to IOT
	2nd	Intergrating Smart TV in to IOT
	3rd	case studies on smart Home
	4th	case studies on smart car
15THWEEK	1st	case studies on cities
	2nd	case studies on drone
	3rd	Industrial Automation
	4th	Industrial Automation

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