SWARNANDHRA
COLLEGE OF ENGINEERING & TECHNOLOGY
Accredited by National Board of Accreditation,
AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA
Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi,
Permanent Affiliation to JNTUK, Kakinada
SEETHARAMPURAM, W.G.DT., NARSAPUR-534280, (Andhra Pradesh)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

TEACHING PLAN Sec D

Course Code	Course Title	Semester	Branch	Contact Period /Week	Academic Year	Semester commencement date
20EC6E04	Wireless communication	VI	ECE	5	2024-25	18-11-2024

COURSE OUTCOMES

After completion of the course student are able to

1	Classify wireless communication systems, their evolution and standards (K3)
2	Illustrate the cellular communication system, architecture, functioning, various standards (K4)
3	Simplify the signal propagation in cellular environment and to explain wireless communication networks. (K3)
4	Perform multiple access schemes, protocols, capabilities and application of various wireless communication networks. (K4)

Unit No	Out Come/ Bloom's Level		Topics/Activity	Reference Text book	Contact Periods	Delivery Method
1.	CO1: Describe the functioning of various example wireless communication systems, their evolution and standards (K1))	**1. INTRODUCTION**				Chalk & Talk, PPT, Active Learning & Tutorial
		1.1	Introduction	T1	1	
		1.2	An overview of wireless communication	T1	2	
		1.3	Future vision	T1	1	
		1.4	Wireless communication system	T1	1	
		1.5	Wireless communication standards	T1	1	
		1.6	Satellite communication system	T1	1	
		1.7	GPS	T1	1	
		1.8	Paging system	T1	1	
		1.9	Cordless phone	T1	1	
		1.10	Wireless local loop	T1	1	
		1.11	RFID	T1	1	
		1.12	Problems	T1	1	
		1.13	Class Test 1		1	
				TOTAL	**14**	
		2. THE CELLULAR FUNDAMENTALS				

2.	CO2: Construct on cellular communication system, architecture, functioning, various standards. (K3)	2.3	General architecture of a cellular system	T1	1	Chalk & Talk, PPT, Active Learning & Tutorial
		2.4	Channel assignment strategies	T1	1	
		2.5	Hand-off in a cellular system	T1	1	
		2.6	Interference and cellular system capacity	T1	1	
		2.7	Co-channel interference	T1	1	
		2.8	Adjacent channel interference	T1	1	
		2.9	Power control	T1	1	
		2.10	Typical cellular standards (AMPS, GSM, GPRS, WCDMA, LTE, concept of LTE-advanced)	T1	1	
		2.11	4G features and challenges	T1	1	
		2.12	5G vision	T1	1	
		2.13	Class Test 2			
				TOTAL	13	
3.	CO3: Demonstrate an understanding on signal propagation in cellular environment and to explain wireless communication networks.(K2)	**3. SIGNAL PROPAGATION IN MOBILE COMMUNICATION**				Chalk & Talk, PPT, Active Learning & Case study
		3.1	Mobile cellular environment	T1	1	
		3.2	Multipath propagation and fading	T1	1	
		3.3	Free space propagation model,	T1	1	
		3.4	Propagation path loss,	T1	1	
		3.5	Outdoor propagation models (Okumura model &Hata model),	T1	1	
		3.6	Indoor propagation models,	T1	1	
		3.7	Power delay profile,	T1	1	
		3.8	Channel parameters (delay spread, doppler spread, coherence bandwidth, coherence time, LCR and ADF).	T1	2	
		3.9	Channel parameters (delay spread, doppler spread, coherence bandwidth, coherence time, LCR and ADF).	T1	2	
		3.10	Channel parameters (delay spread, doppler spread, coherence bandwidth, coherence time, LCR and ADF).	T1	1	
		3.11	Class Test 3		1	
				TOTAL	13	
		4. WIRELESS COMMUNICATION NETWORKS				
		4.1	Wireless Personal Area Networks (Bluetooth, UWB and ZigBee)	T2	1	
		4.2	WLAN	T2	1	

4.	CO4: Understand the functioning, multiple access schemes, protocols, capabilities and application of various wireless communication networks.(K2)	4.3	Wireless Local Area Networks (IEEE 802.11, network architecture, medium access methods, WLAN standards)	T2	1	Chalk &Talk,PPT, Active Learning & Project based learning
		4.4	Wireless Local Area Networks (IEEE 802.11, network architecture, medium access methods, WLAN standards)	T2	1	
		4.5	Wireless Local Area Networks (IEEE 802.11, network architecture, medium access methods, WLAN standards)	T2	2	
		4.6	Wireless Metropolitan Area Networks (WiMAX), Ad-hoc Wireless Networks.	T2	1	
		4.7	Wireless Metropolitan Area Networks (WiMAX), Ad-hoc Wireless Networks.	T2	2	
		4.8	Wireless Metropolitan Area Networks (WiMAX), Ad-hoc Wireless Networks.	T2	1	
		4.9	Class Test 4		1	
				TOTAL	**11**	
5.	CO4: Understand the functioning, multiple access schemes, protocols, capabilities and application of various wireless communication networks.(K2)	**5. MULTIPLE ACCESS SCHEMES**				Chalk & Talk, PPT, Active Learning & Tutorial
		5.1	Duplexing schemes	T2	1	
		5.2	FDMA	T2	1	
		5.3	TDMA	T2	1	
		5.4	SDMA	T2	1	
		5.5	Spread spectrum technique and	T2	1	
		5.6	CDMA	T2	1	
		5.7	OFDMA	T2	1	
		5.8	ALOHA	T2	1	
		5.9	CSMA	T2	1	
		5.11	Class Test 5		1	
	Content Beyond Syllabus	5.12	Applications of 5G	T1	1	
				TOTAL	**12**	
TOTAL NO. OF CLASSES PROPOSED PER PERIOD'S					63	

Text Books:

S.No.	AUTHORS/BOOK TITLE/EDITION(latest)/PUBLISHER/YEAR OF PUBLICATION
1	Andrea Goldsmith, "Wireless Communications", Cambridge University Press,2020. **(Unit-I, II, III, IV)**

2	William Stallings, "Wireless Communication and Networking", PHI, 2014. **(Unit I-V)**

Reference Books:

S.No.	AUTHORS/BOOK TITLE/EDITION(latest)/PUBLISHER/YEAR OF PUBLICATION
1	Vijay K Garg, "Wireless Communications and Networks", Morgan Kaufmann Publishers an Imprint of Elsevier, USA 2017 (Indian reprint)
2	Sanjay Kumar, "Wireless Communication the Fundamental and Advanced Concepts" River Publishers, Denmark, 2015 (Indian reprint).

Web Details:

1	https://nptel.ac.in/courses/117102062
2	https://www.tutorialspoint.com/wireless_communication/wireless_communication_overview.htm

		Name	Signature with Date
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Principal