

Govt. Polytechnic Sundernagar
Lesson Planning (Theory)

Branch : Computer Engg.
Subject: Wireless & Mobile Computing
Teacher : Sonali Malhotra

Semester: Sixth
Session: March-July,2021
Classroom: EC-101

Sr.No	No of Lectures	Chapter Description	Detail Of Content	Reference Resource	Remarks
1	1-8 (8 hrs)	Unit-1 Introduction to Wireless Communication	Wireless communication and its applications, advantages and disadvantages of wireless communication, Types of Services : broadcast, paging, cellular telephony, trunking radio, cordless telephony, WLAN, PAN, adhoc & sensor networks, fixed wireless access; challenges in wireless communication, electromagnetic spectrum, licensed/unlicensed spectrum bands, ISM band, terrestrial and satellite microwave communication, broadcast radio, infrared and lightwave communication, wireless transmission impairments – attenuation, distortion, noise, interference, pathloss, shadowing and fading.	R1,R2,R4	
2	9-18 (10 hrs)	Unit-2 Fundamentals of Wireless Communication	Concept of bandwidth, analog and digital signals, data rate, signal strength, SNR, RSSI, electromagnetic wave propagation: ground waves, sky waves and line-of-sight propagation; radio waves, microwaves, infrared; Overview of Propagation Mechanisms: reflection, diffraction and scattering; outdoor and indoor propagation.	R1,R2,R4	
3	19-28 (10 hrs)	Unit-3 Wireless Communication Systems	Cellular Communication: cellular concept, cellular system architecture, cells, clusters, frequency reuse, cell splitting, handoff, Digital Cellular System : TDMA, ETDM, PCS, CDMA, Global System for Mobile Communication (GSM), GSM network : switching system, BSS, operation and support system, Generations of cellular networks and their features (1G – 5G).	R1,R2,R4	
4	29-36 (8 hrs)	Unit-4 Wireless LAN Technology and Bluetooth	Wireless LAN (WLAN), IEEE-802.11, WLAN applications, WLAN types, WLAN problems – hidden station and exposed station problems; Bluetooth technology, Direct Sequence Spectrum Scheme, Frequency Hopping Spread Spectrum, Personal Area Networks	R1,R2,R4	
5	37-44 (8 hrs)	Unit-5 Mobile Computing Introduction	Mobile computing, Mobile computing functions, Mobile Computing Devices, Middleware and Gateways, Mobile computing environment, Applications and services.	R3,R4	
6	45-52 (8 hrs)	Unit-6 Mobile Computing Architecture	Three tier architecture for Mobile Computing, design considerations for mobile computing, client context manager, introduction to CC/PP, Policy manager, semantic web, security manager, context aware systems, GPS, Mobile computing through Internet.	R3,R4	

7.	53-56 (4 hrs)	Unit-7 Operating System for Mobile Device	An overview of Android Operating System, Architecture, Features of Android OS	R3,R4	
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Reference Resources:

R1— **Wireless Communication: Principles and Practice** by Theodor S. Rappaport, Pearson Education

R2—**Data Communications and Networking** by Behrouz A Forouzan

R3 —**Mobile Computing: Technology, Applications and Service Creation** by Asokek Talukdar and Roopa R. Yavagal

R4—www.tutorialpoints.com



Teachers Signature

(Sonali Malhotra)



Signature of HOD